

# Indiana State Rail Plan

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October 2017





# Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>S-1</b>
S.1 PURPOSE OF THE INDIANA STATE RAIL PLAN .....	S-1
S.2 VISION, GOALS AND OBJECTIVES .....	S-1
S.3 INDIANA RAIL NETWORK .....	S-3
S.4 PASSENGER RAIL ISSUES, OPPORTUNITIES, PROPOSED INVESTMENTS AND IMPROVEMENTS .....	S-7
S.5 SAFETY/CROSSING ISSUES, PROPOSED INVESTMENTS AND IMPROVEMENTS .....	S-9
S.6 FREIGHT RAIL ISSUES, PROPOSED INVESTMENTS, AND IMPROVEMENTS .....	S-9
S.7 RAIL SERVICE AND INVESTMENT PROGRAM .....	S-12
<b>1 THE ROLE OF RAIL IN STATEWIDE TRANSPORTATION (OVERVIEW) .....</b>	<b>1</b>
1.1 PURPOSE AND CONTENT .....	1
1.2 MULTIMODAL TRANSPORTATION SYSTEM GOALS .....	2
1.3 ROLE OF FREIGHT RAIL IN THE INDIANA TRANSPORTATION NETWORK .....	3
1.4 FREIGHT RAIL SERVICES, INITIATIVES, AND PLANS .....	4
1.4.1 Federally Funded .....	4
1.4.2 State Funded .....	5
1.4.3 Privately Funded .....	5
1.5 ROLE OF PASSENGER RAIL IN INDIANA TRANSPORTATION NETWORK .....	6
1.6 PASSENGER RAIL SERVICES, INITIATIVES AND PLANS .....	8
1.6.1 Passenger Rail Services .....	8
1.6.2 Intercity Passenger Rail Initiatives and Plans .....	8
1.6.3 Commuter Rail Initiatives and Plans .....	9
1.7 INSTITUTIONAL GOVERNANCE STRUCTURE OF RAIL IN INDIANA .....	9
1.7.1 INDOT's Legislative Rail Authority and Organization .....	9
1.7.2 Institutional Governance Structure of Rail Programs beyond INDOT .....	12
1.8 PUBLIC FUNDING AND FINANCING OF RAIL PROJECTS .....	13
1.8.1 State Rail Funding in Indiana .....	14
1.8.2 Federal Funding Sources .....	16
1.8.3 Federal Financing Programs .....	20
1.8.4 Local Funding of Rail Projects .....	22
1.8.5 Alternate Funding and Financing Options .....	22
1.8.6 Uncertainty in Rail Funding and Financing .....	24
<b>2 THE STATE'S EXISTING RAIL SYSTEM .....</b>	<b>25</b>
2.1 DESCRIPTION AND INVENTORY .....	25
2.1.1 Capacity and Usage of Rail Lines in Indiana .....	25
2.1.2 Height and Weight Capacity of Rail Lines in Indiana .....	30
2.1.3 Railroad Companies in Indiana .....	32
2.1.4 Strategic Rail Corridor Network .....	37
2.1.5 Inactive and Abandoned Rail Lines in Indiana .....	38
2.2 FREIGHT MULTIMODAL CONNECTIONS .....	41
2.2.1 Intermodal Terminals .....	42
2.2.2 Automotive Terminals .....	43
2.2.3 Transload Terminals .....	44
2.2.4 Grain Elevators and other Agricultural Facilities .....	44
2.2.5 Ports and Waterways .....	44
2.3 IMPACT OF FREIGHT RAIL IN INDIANA .....	45
2.3.1 Congestion Mitigation .....	45
2.3.2 Safety .....	46
2.3.3 Trade and Economic Development .....	46
2.3.4 Environmental: Energy Use and Air Quality .....	47
2.3.5 Land Use and Community Impacts .....	47
2.3.6 Preservation of Road and Bridge Infrastructure .....	47
2.3.7 Case Studies .....	48
2.4 PASSENGER RAIL SERVICES IN INDIANA .....	49
2.4.1 Intercity Passenger Rail .....	49
2.4.2 Commuter Rail .....	53

2.4.3	Excursion/Tourist Railroads .....	53
<b>2.5</b>	<b>PASSENGER RAIL STATIONS .....</b>	<b>54</b>
2.5.1	Intercity Passenger Rail Stations.....	54
2.5.2	Commuter Rail Stations .....	54
<b>2.6</b>	<b>PASSENGER RAIL RIDERSHIP AND PERFORMANCE .....</b>	<b>55</b>
2.6.1	Intercity Passenger Rail Ridership and Performance .....	55
2.6.2	Hoosier State Ridership and Performance .....	61
<b>2.7</b>	<b>IMPACT OF PASSENGER RAIL IN INDIANA.....</b>	<b>64</b>
2.7.1	Congestion Mitigation .....	64
2.7.2	Safety .....	65
2.7.3	Trade and Economic Development .....	65
2.7.4	Environmental: Energy Use and Air Quality .....	66
2.7.5	Land Use and Community Impacts .....	68
2.7.6	Case Study – Indiana Gateway.....	68
<b>2.8</b>	<b>ONGOING PROJECTS AND PROGRAMS TO IMPROVE SAFETY AND SECURITY .....</b>	<b>69</b>
2.8.1	Crossings .....	69
2.8.2	Hazardous Materials .....	75
<b>2.9</b>	<b>THE STATE’S EXISTING RAIL SYSTEM: TRENDS AND FORECASTS .....</b>	<b>75</b>
2.9.1	Demographic and Economic Growth Factors .....	75
2.9.2	Freight Demand and Growth .....	82
2.9.3	Passenger Travel Demand and Growth .....	94
2.9.4	Fuel Cost Trends.....	96
2.9.5	Rail Congestion Trends .....	96
2.9.6	Airport Congestion Trends .....	97
2.9.7	Land Use Trends.....	98
<b>3</b>	<b>PASSENGER RAIL ISSUES, OPPORTUNITIES, PROPOSED IMPROVEMENTS AND INVESTMENTS .....</b>	<b>99</b>
<b>3.1</b>	<b>HOOSIER STATE.....</b>	<b>99</b>
3.1.1	Rail Service Competition .....	99
3.1.2	Proposed Improvements for the Hoosier State Service .....	100
<b>3.2</b>	<b>MICHIGAN CHICAGO HUB (CHICAGO-DETROIT/PONTIAC) IMPROVEMENTS.....</b>	<b>102</b>
<b>3.3</b>	<b>NORTHERN INDIANA PASSENGER RAIL ASSOCIATION (NIPRA) .....</b>	<b>102</b>
<b>3.4</b>	<b>MIDWEST REGIONAL RAIL PLANNING STUDY .....</b>	<b>103</b>
<b>3.5</b>	<b>CHICAGO/INDIANA GATEWAY IMPROVEMENTS .....</b>	<b>104</b>
3.5.1	Chicago Region Environmental and Transportation Efficiency Program (CREATE).....	104
3.5.2	Indiana Gateway Project .....	105
3.5.3	Amtrak Chicago Gateway Blue Ribbon Panel .....	105
<b>3.6</b>	<b>NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT .....</b>	<b>106</b>
3.6.1	Five-Year Improvement Program .....	106
3.6.2	Equipment Replacement .....	106
3.6.3	West Lake Extension .....	106
3.6.4	Capacity Projects .....	107
3.6.5	Station Projects .....	108
3.6.6	Track Realignments .....	109
3.6.7	Positive Train Control .....	109
<b>4</b>	<b>FREIGHT RAIL ISSUES, OPPORTUNITIES, PROPOSED IMPROVEMENTS AND INVESTMENTS .....</b>	<b>110</b>
<b>4.1</b>	<b>SAFETY AND CROSSINGS .....</b>	<b>110</b>
<b>4.2</b>	<b>STATE OF GOOD REPAIR/CORRIDOR PRESERVATION.....</b>	<b>112</b>
<b>4.3</b>	<b>MULTIMODAL ISSUES.....</b>	<b>114</b>
4.3.1	Intermodal .....	114
4.3.2	Transload .....	121
4.3.3	Automotive.....	122
4.3.4	Ports .....	122
<b>4.4</b>	<b>RAIL AND ECONOMIC DEVELOPMENT .....</b>	<b>123</b>
<b>4.5</b>	<b>CONNECTIVITY .....</b>	<b>124</b>
<b>5</b>	<b>INDIANA’S RAIL SERVICE AND INVESTMENT PROGRAM.....</b>	<b>125</b>
<b>5.1</b>	<b>VISION.....</b>	<b>125</b>

5.1.1	Vision Statement .....	125
5.1.2	Goals and Objectives.....	125
<b>5.2</b>	<b>PROGRAM COORDINATION .....</b>	<b>127</b>
<b>5.3</b>	<b>PASSENGER ELEMENT .....</b>	<b>127</b>
5.3.1	Hoosier State.....	127
5.3.2	Northern Indiana/Ohio Passenger Rail.....	128
5.3.3	Commuter Rail.....	128
<b>5.4</b>	<b>FREIGHT ELEMENT .....</b>	<b>129</b>
5.4.1	Short-Range Investment Program .....	129
5.4.2	Long-Range Freight Rail Service and Investment Program .....	129
<b>5.5</b>	<b>RAIL STUDIES AND REPORTS.....</b>	<b>135</b>
<b>6</b>	<b>COORDINATION AND REVIEW.....</b>	<b>136</b>
<b>6.1</b>	<b>APPROACH TO PUBLIC AND STAKEHOLDER OUTREACH .....</b>	<b>136</b>
6.1.1	Identification of Stakeholders.....	136
6.1.2	Stakeholder Regional Workshops and Open Houses.....	137
6.1.3	Interviews and Stakeholder Meetings.....	138
6.1.4	Railroad Information Requests.....	138
6.1.5	Online Survey.....	138
<b>6.2</b>	<b>COORDINATION WITH NEIGHBORING STATES.....</b>	<b>138</b>
<b>6.3</b>	<b>ISSUES AND RECOMMENDATIONS.....</b>	<b>138</b>
6.3.1	Economic Development .....	139
6.3.2	Effectiveness .....	140
6.3.3	Safety .....	141
6.3.4	Quality of Life.....	142
6.3.5	Transportation Finance.....	142
<b>6.4</b>	<b>COORDINATION OF RAIL PLANNING WITH OTHER PLANNING ACTIVITIES .....</b>	<b>142</b>

## APPENDIX A – SUPPORTING FIGURES AND TABLES

## APPENDIX B – SHORT-RANGE INVESTMENT PROGRAM

## APPENDIX C – LONG-RANGE INVESTMENT PROGRAM

## APPENDIX D – RESULTS OF ONLINE SURVEY

# Tables

Table 1.1. State Rail Plan Content .....	2
Table 1.2. 2015 Tonnage Rail Modal Share by Distance and Commodity Group for Shipments to and from Indiana .....	4
Table 1.3. Indiana Population Served by Intercity Passenger Rail .....	7
Table 1.4. Intercity Passenger Routes Serving Stations in Indiana .....	8
Table 1.5. Intercity Passenger Routes Passing through Indiana without Stations in the State .....	8
Table 1.6. Indiana State Funding by Program .....	10
Table 2.1. Class I Railroad Mileage in Indiana .....	32
Table 2.2. Intermodal Facilities .....	43
Table 2.3. Automotive Facilities .....	44
Table 2.4. Major Rail-Served Port Facilities in Indiana .....	45
Table 2.5. Truck Crash and Rail Accident Rates per 10 Billion Ton-Miles (2014 National Figures) .....	46
Table 2.6. Comparison of Truck and Rail Emission Rates .....	47
Table 2.7. Intercity Passenger Routes Serving Stations in Indiana .....	51
Table 2.8. Intercity Passenger Rail Ridership by Station and Route – Ons and Offs (October 2014 – September 2015) .....	57
Table 2.9. PRIIA Section 207 Amtrak Performance Metrics .....	57
Table 2.10. Change in Percentage of Fully Allocated Operating Cost Covered by Passenger Revenue .....	58
Table 2.11. Passenger-Miles per Train-Mile .....	58
Table 2.12. On-time Performance Statistics for Intercity Passenger Routes Serving Indiana .....	59
Table 2.13. Host-Railroad Responsible Delays in Minutes Delay per 10,000 Train-Miles 4th Quarter FY2016 .....	60
Table 2.14. Amtrak Responsible Delays in Minutes Delay per 10,000 Train-Miles 4th Quarter FY 2016 .....	60
Table 2.15. Amtrak Customer Service Index for FY2016 .....	61
Table 2.16. Rail-Related Fatalities in Indiana .....	69
Table 2.17. Public, Private, Pedestrian Crossings in Indiana .....	70
Table 2.18. Warning Devices of Public Crossings in Indiana .....	70
Table 2.19. Crashes at Rail-Highway Grade Crossings in Indiana .....	71
Table 2.20. Rail Tonnage by Direction (2014) .....	83
Table 2.21. Top Commodities Originating or Terminating in Indiana (2014 Tons) .....	83
Table 2.22. Percentage of Intermodal Freight Flow by Direction by Tonnage, 2014 .....	92
Table 2.23. Intermodal Freight Flow Tonnage by Type of Flow .....	94
Table 2.24. Average Annual Diesel Prices (2012 – April 2016) .....	96
Table 2.25. Network Velocity, Amtrak On-Time Performance .....	96
Table 3.1. Amtrak Arrivals and Departures at Union Station, Chicago .....	102
Table 3.2. Summary of NICTD 2017 – 2021 Transportation Improvement Plan .....	106
Table 5.1. Northern Indiana Commuter Transportation District 20-Year Strategic Business Plan .....	129
Table 5.2. Summary of Short-Range Rail Service and Investment Program .....	129
Table 5.3. Summary of the (Unfunded) Long-Range Freight Rail Service and Investment Program .....	134
Table 6.1. Outreach Approaches in the Indiana State Rail Plan .....	136
Table 6.2. Identified Stakeholders by Type of Organization .....	137
Table 6.3. Attendance at Stakeholder Workshops and Open Houses .....	138

# Figures

Figure 1.1. Amtrak Stations within a 30 Mile Radius of Indiana .....	7
Figure 1.2. Organization of the INDOT Multimodal Planning & Programs Division .....	11
Figure 2.1. Density of Indiana Rail Network (2012) .....	26
Figure 2.2. Number of Tracks on Rail Lines in Indiana .....	27
Figure 2.3. Signaling System of Rail Lines in Indiana .....	29
Figure 2.4. Clearance Requirements by Type of Rail Equipment .....	30
Figure 2.5. Ability of Indiana Rail Lines to Accommodate 286,000 Pound Railcars, 2016 .....	31
Figure 2.6. Indiana Rail Network .....	33
Figure 2.7. CSX Subdivisions .....	34
Figure 2.8. Norfolk Southern Districts .....	35
Figure 2.9. Strategic Rail Corridor Network (STRACNET) .....	37
Figure 2.10. Active and Abandoned Rail Lines in Indiana .....	39
Figure 2.11. Active and Rail Banked Lines in Indiana.....	40
Figure 2.12. Abandoned Rail Mileage by Year.....	41
Figure 2.13. Rail-Served Multimodal Facilities in Indiana .....	42
Figure 2.14. Old White River Bridge .....	48
Figure 2.15. Intercity Passenger Rail Routes in Indiana .....	52
Figure 2.16. South Shore Line Map .....	53
Figure 2.17. Ridership Trends of Amtrak Routes in Indiana (Ons and Offs within Indiana) .....	56
Figure 2.18. Origin-Destination Pairs of Hoosier State Ridership (2016).....	62
Figure 2.19. Hoosier State Revenue .....	63
Figure 2.20. Hoosier State Average Monthly On-time Performance.....	63
Figure 2.21. Hoosier State Ridership .....	63
Figure 2.22. Northern Indiana Commuter Transportation District Annual Ridership .....	64
Figure 2.23. Passenger Fatality Rates per 100 Million Passenger-Miles .....	65
Figure 2.24. Indiana Gateway Projects .....	69
Figure 2.25. Highway-Rail Grade Crossing Crashes by County (2014 – 2016).....	73
Figure 2.26. Typical Section 130 Program Project: New Train-Activated Flashing Lights, Bell, Gates, Overhead Cantilever, Constant Warning Time Circuitry .....	74
Figure 2.27 Median Household Income (2014) .....	78
Figure 2.28. Population Growth by County (2000–2010) .....	80
Figure 2.29. Population Growth by County (projected 2010–2030) .....	81
Figure 2.30. Freight Flow by Commodity and Direction, 2014 Tons .....	84
Figure 2.31. Past and Future Originating and Terminating Indiana Rail Coal Traffic (by Tons) .....	86
Figure 2.32. Past and Future Originating and Terminating Indiana Rail Primary Metal Traffic by Tons .....	87
Figure 2.33. Past and Future Originating Indiana Rail Agriculture Traffic by Tons .....	88
Figure 2.34. Past and Future Originating Indiana Rail Food Products Traffic by Tons .....	89
Figure 2.35. Past and Future Originating and Terminating Indiana Rail Chemical Traffic by Tons .....	90
Figure 2.36. Past and Future Terminating Indiana Rail Waste and Scrap by Tons .....	91
Figure 2.37. Past and Future Terminating Indiana Rail Petroleum and Coal Products by Tons.....	92
Figure 2.38. Origins of Intermodal Freight Flow Passing through Indiana, 2014 Tons.....	93
Figure 2.39. Destinations of Intermodal Freight Flowing Passing through Indiana .....	93
Figure 2.40. 2035 Level of Service – Indiana Statewide Mobility Corridors – Committed Projects .....	95
Figure 2.41. Percentages of Arrivals and Departures On-Time (Jan. – Aug.).....	98

Figure 3.1. Indiana State Rail Plan Survey Results – Priority of Potential Improvements to the Hoosier State .....	101
Figure 3.2. Chicago, IL to Columbus, OH- Rail Corridor .....	103
Figure 3.3. West Lake Corridor Project .....	107
Figure 3.4. Northern Indiana Commuter Transportation District Double Tracking.....	108
Figure 4.1. Northwest Indiana VISION High-Priority Grade Separations .....	112
Figure 4.2. CN/INRD Service from Prince Rupert to Indianapolis .....	117
Figure 4.3. Indianapolis Container-Stuffing Facility.....	118
Figure 4.4. Southwest Indiana Logistics Center – Concept Drawing .....	119
Figure 4.5. Impact of Panama Canal on NS Intermodal Markets Served through East Coast Ports .....	120
Figure 4.6. CSX North Baltimore Intermodal Facility .....	121
Figure 4.7. Potential Fourth Port – Ports of Indiana.....	123



# Acronyms

AAR.....	Association of American Railroads
ABS.....	Automatic Block Signaling
ACS.....	American Community Survey
ADA.....	Americans with Disabilities Act
BIF.....	Build Indiana Fund
CILC.....	Conexus Indiana Logistics Council
CMAQ.....	Congestion Mitigation and Air Quality
CN.....	Canadian National
CPP.....	Clean Power Plan
CREATE.....	Chicago Region Environmental and Transportation Efficiency
CSI.....	Customer Service Index
CTC.....	Centralized Traffic Control
DDGS.....	Distillers Dried Grains and Solubles
DoD.....	U.S. Department of Defense
DOT.....	Department of Transportation
EDA.....	Economic Development Administration
EIA.....	Energy Information Administration
EPA.....	Environmental Protection Agency
FAST.....	Fixing America's Surface Transportation
FHWA.....	Federal Highway Administration
FRA.....	Federal Railroad Administration
FTA.....	Federal Transit Administration
GSP.....	Gross State Product
HHPA.....	Hoosier Heritage Port Authority
IEDC.....	Indiana Economic Development Corporation
INFRA.....	Infrastructure for Rebuilding America
INOL.....	Indiana Operation Lifesaver
IRSF.....	Industrial Rail Service Fund
ISRR.....	Indiana Southern Railroad
ISTDM.....	Indiana Statewide Travel Demand Model
L&I.....	Louisville & Indiana
MATS.....	Mercury and Air Toxics Standards
MDOT.....	Michigan Department of Transportation
MIPRC.....	Midwest Interstate Passenger Rail Commission
MPO.....	Metropolitan Planning Organization
NHFP.....	National Highway Freight Program
NICTD.....	Northern Indiana Commuter Transportation District
NIPRA.....	Northern Indiana Passenger Rail Association
NS.....	Norfolk Southern
NSFHP.....	Nationally Significant Freight and Highway Projects
OTP.....	On-Time Performance
PCPI.....	Per capita personal income
PPP.....	Public-Private Partnerships
PRIIA.....	Passenger Rail Investment and Improvement Act
PTC.....	Positive Train Control

RRGCF.....	Railroad Grade Crossing Fund
RRIF .....	Railroad Rehabilitation and Improvement Financing
SHSP .....	Strategic Highway Safety Plan
STB .....	Surface Transportation Board
TEU .....	Twenty-foot Equivalent Units
TIF.....	Tax Increment Financing
TIFIA .....	Transportation Infrastructure Finance and Innovation Act
TIGER.....	Transportation Investment Generating Economic Recovery
TOD .....	Transit-Oriented Development
TPW .....	Toledo Peoria & Western
TTL.....	Texas Transportation Institute
TWC.....	Track Warrant Control
UP .....	Union Pacific
VISION .....	Velocity, Information, Safety, Improvements and Opportunity Network
VMT .....	Vehicle-miles traveled

# Executive Summary

## S.1 PURPOSE OF THE INDIANA STATE RAIL PLAN

The Indiana State Rail Plan (Plan) provides an opportunity to summarize the existing conditions, needs and opportunities of the Indiana rail system and to engage in a dialogue regarding the state's rail network with stakeholders and the general public. The Plan covers freight rail, intercity passenger rail and commuter rail. The Plan also fulfills a federal requirement to complete state rail plans as established by the Passenger Rail Investment and Improvement Act (PRIIA) of 2008. Inclusion within a state rail plan helps rail infrastructure projects to qualify for future federal funding.

The Plan consists of six chapters as prescribed by the FRA's guidelines, which are as follows:

- Chapter 1 discusses the role of rail in the state's transportation system, and how Indiana state and local governments are set up to support rail.
- Chapter 2 describes Indiana's rail network, its condition, its usage, environmental and economic impacts to the state, and trends that will impact the rail network in the future.
- Chapter 3 identifies passenger rail needs and opportunities, discusses improvements and investments that have been proposed to address the needs and opportunities.
- Chapter 4 discusses freight rail needs, opportunities, investments and improvements.
- Chapter 5 presents INDOT's vision, goals, and objectives for the rail system over the next 20 years, summarizes rail projects that have been identified to help meet that vision, describes available funding for those projects, and potential impacts of proposed projects if they were to be completed.
- Chapter 6 summarizes outreach and coordination efforts in developing the Plan.

## S.2 VISION, GOALS AND OBJECTIVES

Indiana's rail transportation vision, goals and objectives provides guidance to the state's priorities.

### S.2.1 Vision Statement

INDOT will promote improved safety, reliability and efficiency of the state's freight and passenger rail network with a goal of enhancing Indiana's economy.

To achieve this, INDOT will work with private railroads and public port authorities; promote both freight and passenger rail services; and work with partner agencies at all organizational levels to plan rail network improvements - including intermodal strategies - to enhance domestic and global connectivity for Indiana.

INDOT will explore avenues to provide financial resources supporting cost effective investments to help achieve freight, intercity passenger and commuter rail network goals.

### **S.2.2 Goals and Objectives**

Based upon the vision described above, goals and objectives as set forth in this State Rail Plan are listed below. Goals break down the vision into manageable pieces. Objectives provide the types of actions and policies that will be employed to achieve the goals.

#### **GOAL: SAFETY**

Help improve and promote the safety of the rail system, as well as raise public awareness of rail safety issues.

##### **OBJECTIVES**

- Reduce the number of rail-highway at-grade crossings
  - Work with railroads and local communities to close redundant crossings
  - Grade separate crossings where conditions warrant and funding is available
- Promote awareness of safety hazards related to rail-highway at-grade crossings and trespassing on rail rights-of-way through support of Operation Lifesaver
- Improve safety of rail-highway at-grade crossings
  - Promote repair of grade crossing surfaces in poor condition
  - Improve sight lines and passive warning devices at crossings
  - Encourage communities and railroads to install other safety countermeasures where appropriate, such as median barriers and channelization to actively and passively protected crossings

#### **GOAL: ECONOMIC DEVELOPMENT & CORRIDOR FINANCING**

- Support economic competitiveness by supporting infrastructure improvements that reduce freight transportation costs and more effectively connect Indiana with regional, national, and international markets
- Increase intermodal facilities where appropriate
- Support infrastructure improvements that better connect people with economic opportunities
- Support adequate and reliable funding for rail systems from all sources: federal, state, local governments and the private sector

##### **OBJECTIVES:**

- Support efforts to better connect Indiana with regional, national and international markets through new or improved transportation service options:
  - Support practical efforts to better connect Indiana cities with global markets through improved intermodal rail container service
  - Support efforts to expand rail service through transload facilities
  - Support adequate rail connections to Indiana's ports and harbors
  - Support efforts to facilitate better connections between railroads
  - Promote the establishment or improvement of rail service at new or existing industrial sites

- Support passenger rail connections between regional economic centers where prudent and cost effective to do so
- Support the Chicago–Fort Wayne–Columbus passenger rail route
- Support the Chicago–Indianapolis–Cincinnati/Louisville passenger rail route
- Support the Chicago–Detroit passenger rail route
- Preserve and enhance existing rail corridors using existing state grant funds
- Identify additional federal, state and private funding sources for rail projects and programs
- Provide assistance to railroads, port authorities, and local governments to secure funding and financing for projects that benefit the public

### GOAL: TRANSPORTATION EFFECTIVENESS

Reduce bottlenecks and maintain rail system in a state of good repair to improve the reliability and efficiency of railroad transportation, resulting in less congestion and fewer infrastructure repairs.

#### OBJECTIVES:

- Use state and federal funds to support the maintenance of the rail network in a state of good repair, including not only railroad track improvements, but also relevant structures such as bridges
- Work with neighboring states to continue to investigate options to address regional bottlenecks in the existing rail network for both freight and passenger rail traffic, such as the Greater Chicago area
- Support opportunities to improve the speed and frequency of both freight and passenger rail service where financially and economically feasible to do so
- Support improved connectivity within the State’s rail infrastructure and with other modes of transportation
- Support the *Hoosier State* and improve upon the current services and schedule
- Support the double tracking of the Northern Indiana Commuter Transportation District (South Shore operated by Northern Indiana Commuter Transportation District)
- Offer support of the development of the Chicago – Fort Wayne – Columbus passenger rail route

## S.3 INDIANA RAIL NETWORK

Rail transportation is very important to Indiana. The Association of American Railroads (AAR) ranks Indiana among the top ten states in numerous categories including number of railroads operating in the state, rail mileage, tonnage and carloads carried, and originating and terminating tonnage for select commodities.<sup>1</sup> Indiana has one of the highest densities of rail lines in the nation. Only Illinois, Ohio, and Pennsylvania have comparable numbers of rail route miles per square mile.

The heavy concentration of rail lines in Indiana results from a number of reasons. One is the state’s location on major trade corridors between the Midwest, the Northeast, and the Southeast. Chicago is the nation’s largest rail gateway, handling about 25 percent of U.S. freight rail traffic. Most freight

<sup>1</sup> Association of American Railroads, State Rankings,  
[https://www.aar.org/Style%20Library/railroads\\_and\\_states/dist/data/pdf/State%20rankings.pdf](https://www.aar.org/Style%20Library/railroads_and_states/dist/data/pdf/State%20rankings.pdf)

traveling between Chicago and points east flows through Indiana. According to the U.S. Surface Transportation Board's (STB) 2014 Waybill Sample, about 71 percent of tonnage handled by freight railroads in Indiana passes through the state with neither an origination nor termination within the state.

Indiana also has a high concentration of industries that rely on rail transportation. Manufacturing makes up nearly 30 percent of Indiana's real gross state product, compared to 12 percent in the United States.<sup>2</sup> Many of Indiana's manufacturing industries rely on rail. Indiana is the nation's largest steel producer with integrated steel mills concentrated in the northwest corner of the state and mini-mills located across Indiana. Steel producers use railroads for outbound steel shipments, as well as inputs to the steel making process such as steel scrap, iron ore, limestone, and metallurgical coal (coking coal). Other major manufacturing industries such as food processing and chemical production within the state are also dependent on rail. In addition, Indiana is the nation's eighth largest coal producer. As shown in Table S-1, coal accounts for 40 percent of rail tonnage shipped from Indiana and 54 percent of tonnage shipped to Indiana (some of these are movements between Indiana mines and Indiana power plants). The state is one of the nation's top 10 agricultural producing states with rail-served grain elevators throughout the northern and western portions of Indiana.<sup>3</sup>

*Table S-1. Top Commodities Originating or Terminating in Indiana, 2014 Tons*

Commodity	Originating	Percent	Commodity	Terminating	Percent
Coal	24,588,128	40%	Coal	31,824,910	54%
Primary Metal Products	10,276,323	17%	Primary Metal Products	7,714,450	13%
Farm Products	9,328,542	15%	Chemicals or Allied Products	4,512,396	8%
Food or Kindred Products	6,478,527	11%	Waste or Scrap Materials	4,467,556	8%
Chemicals or Allied Products	3,092,842	5%	Petroleum or Coal Products	2,102,349	4%
Transportation Equipment	1,371,216	2%	Farm Products	1,679,004	3%
Waste or Scrap Materials	1,108,672	2%	Non-metallic Minerals	1,378,980	2%
Clay, Concrete, Glass, or Stone Products	988,664	2%	Food or Kindred Products	1,038,960	2%
Non-metallic Minerals	956,344	2%	Clay, Concrete, Glass, or Stone Products	946,432	2%
Petroleum or Coal Products	770,658	1%	Metallic Ores	734,196	1%
Other	1,880,297	3%	Other	2,454,892	4%
<b>Grand Total</b>	<b>60,840,213</b>	<b>100%</b>	<b>Grand Total</b>	<b>58,854,125</b>	<b>100%</b>

Source: 2014 Surface Transportation Board Carload Waybill Sample

Most rail lines in Indiana are owned by private freight railroad companies. The exceptions are the 90-mile South Shore Line owned by the Northern Indiana Commuter Transportation District (NICTD), 17 miles owned by Amtrak, 66 miles owned by tourist or excursion trains, and 52 miles owned by Railroad Port Authorities, which are county or municipally owned. The two largest freight railroads operating in the state—Norfolk Southern Railway and CSX Transportation (CSX)—own 57 percent of the

<sup>2</sup> U.S. Bureau of Economic Analysis, *Real GDP by State (Chained 2009\$)*

<sup>3</sup> <https://www.ers.usda.gov/data-products/agricultural-productivity-in-the-us/>

Indiana rail network. Most of the rest of the Indiana rail network is owned by smaller freight railroad companies, including the Indiana Rail Road, a Class II rail carrier (defined by the STB as carriers with between \$36.6 million and \$457.9 million in annual revenues) and 38 Class III carriers (revenues less than \$36.6 million).<sup>4</sup> Class II and Class III railroads provide a retail function within the Indiana rail network by gathering rail shipments and passing them between customers and Class I railroads, which then provide long-haul service to other parts of the country. Figure S-1 displays railroad operating in the state.

Figure S-1. Indiana Rail Network



Source: INDOT, U.S. Department of Transportation, WSP | Parsons Brinckerhoff

<sup>4</sup> The threshold figures are adjusted annually for inflation using the base year of 1991. As of mid-2017 the thresholds are based on a 2015 inflation index.



Commuter rail service within Indiana is provided by the NICTD, which operates 43 trains each weekday on the 90-mile South Shore Line between Millennium Station in downtown Chicago and South Bend Airport as depicted in Figure S-2.

Figure S-2. Map of the South Shore Line



Source: Northern Indiana Commuter Transportation District

Intercity passenger rail service in Indiana is provided by the National Railroad Passenger Corporation, otherwise known as Amtrak. Eleven Amtrak trains per day operating on five routes stop at Indiana stations as shown in Table S-2. All Amtrak routes that serve Indiana originate or terminate in Chicago. Three of the routes are “long-distance” meaning that they are over 750 miles and are subsidized through federal appropriations. Shorter routes are state-supported financially. The *Wolverine* service is supported by the State of Michigan and the *Hoosier State* service is supported by the State of Indiana as well as local communities served by the line. With the exception of a 17 mile Amtrak-owned track segment used by the *Wolverine* service, all Amtrak services within Indiana are provided over rail lines owned by freight railroads.



Table S-2. Intercity Passenger Routes Serving Stations in Indiana

Route	Type of Service	Total Route Mileage	Mileage in Indiana	Service Frequency (each direction)	End Point Stations	Stations in Indiana
Hoosier State	Indiana state (and locally) supported	196	170	One train four days per week	Indianapolis, IN and Chicago, IL	Indianapolis, Crawfordsville, Lafayette, Rensselaer, Dyer
Cardinal	Long-Distance	1,147	225	One train three days per week (opposite Hoosier State schedule)	New York, NY and Chicago, IL	Connersville, Indianapolis, Crawfordsville, Lafayette, Rensselaer, Dyer
Capitol Limited	Long-Distance	780	140	One train daily	Washington, DC and Chicago, IL	Waterloo, Elkhart, South Bend
Lake Shore Limited	Long-Distance	959 (New York to Chicago) 1017 (Boston to Chicago)	140	One train daily with cars to/from Boston and New York coming together at Albany-Rensselaer, NY	Boston, MA, New York, NY and Chicago, IL	Waterloo, Elkhart, South Bend
Wolverine	Michigan state supported	304	48	Three trains daily, but two stop at Hammond –Whiting and Michigan City northbound, two stop at Hammond-Whiting southbound, one stops at Michigan City southbound	Chicago, IL and Pontiac, MI	Michigan City, Hammond-Whiting

Source: Amtrak, [www.hoosierstatetrain.com](http://www.hoosierstatetrain.com)

## S.4 PASSENGER RAIL ISSUES, OPPORTUNITIES, PROPOSED INVESTMENTS AND IMPROVEMENTS

### S.4.1 Hoosier State

Prior to 2013, Indiana did not fund intercity passenger rail service. However, U.S. Congress voted to end federal support for the *Hoosier State* and all other Amtrak routes of less than 750 miles throughout the country effective October 2013. The State of Indiana partnered with local governments along the corridor to fund the *Hoosier State's* operating and capital costs not covered by ticket revenue. During the biennial budget period between July 2015 and June 2017, the State of Indiana funded the service at \$3 million per year, while the communities of Crawfordsville, Lafayette, Rensselaer, Tippecanoe County, and West Lafayette contributed approximately \$255,000 in FY2016 and \$350,000 in FY2017 for the service. For the first time, the Indiana biennial budget signed by Governor Holcomb in April 2017 included a line item for the *Hoosier State*, providing \$3 million per year through June 30, 2019. These same local governments have agreed to continue their financial support of the service at the FY2017 level. Amtrak's Beech Grove facility will also help the service by crediting INDOT for moving cars and locomotives to and from the facility on *Hoosier State* trains.

Indiana was the first state after the passage of PRIIA to exercise the newly permitted consideration of alternative operators for intercity passenger rail routes. Iowa Pacific Holdings provided train equipment and maintenance, on-board services, and marketing for the *Hoosier State* between July 2015 and

February 2017. Amtrak continued to provide operating crews, work with the host railroads, and provide ticketing. On March 1, 2017, Amtrak took over the functions on the *Hoosier State* previously performed by Iowa Pacific. Although Iowa Pacific's participation has ended, involving this third party can be counted a success. Iowa Pacific inserted an element of competition that would otherwise have been lacking and increased support for the service statewide.

INDOT is exploring potential improvements to the *Hoosier State* route and has initiated a study to conduct engineering analysis of infrastructure improvements on host rail lines and to propose a prioritized program of infrastructure upgrades that could improve and expand the *Hoosier State* service while having a positive or no impact on freight operations.

#### **S.4.2 Northern Indiana Passenger Rail Association**

The Northern Indiana Passenger Rail Association seeks to re-establish passenger rail service between Chicago and Columbus, OH through Fort Wayne. In January 2017, the City of Fort Wayne and the Federal Railroad Administration (FRA) announced the launch of a \$350,000 environmental assessment for the Chicago–Fort Wayne–Columbus corridor to advance prior planning and fundraising efforts. This study, expected to be completed in the fall of 2017, will ensure compliance with the National Environmental Policy Act and serve as the next step toward the possibility of restoring the passenger service. Pending the outcome of the assessment, preliminary engineering and eventual construction and capital improvements to the corridor may follow.<sup>5</sup>

#### **S.4.3 Indiana/Chicago Gateway Improvements**

All intercity passenger rail, most commuter rail services, and many freight trains in Indiana originate or terminate in Chicago. Because of its prominence in Indiana passenger and freight rail operations, congestion in Chicago can significantly affect rail operations in the state. Approaches to Chicago within Indiana are also important to regional rail capacity. The Indiana Gateway Project is a \$71.4 million investment in eight track infrastructure projects between Burdick, IN, and the Indiana/Illinois state line that includes sections of additional parallel track, passing sidings, and crossovers that will allow trains to cross between parallel tracks to add capacity and system redundancy. Construction was completed in March 2017. The Amtrak Chicago Gateway Blue Ribbon Panel builds on the Indiana Gateway Project by prioritizing infrastructure improvements and advocating for these improvements. Established in October 2014, the panel comprises government and private sector experts with experience in rail policy issues. Among the panel's recommendations are additional investment on the Porter-to-Chicago corridor. This would better accommodate the approximately 100 trains that travel the corridor each day.

#### **S.4.4 Regional Initiatives**

INDOT is involved with interstate initiatives examining alternatives to improve passenger rail in the Midwest. In addition to studies underway on the Chicago–Fort Wayne–Columbus corridor, the FRA is conducting the Midwest Regional Rail Planning Study, a multi-state planning effort to develop a comprehensive vision and governance model for an integrated regional rail network to advance passenger rail planning, procurement, and operations in the Midwest. INDOT is participating in the study as a primary stakeholder. The Midwest Interstate Passenger Rail Commission comprises state

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<sup>5</sup> <http://niprarail.org/>

leaders in Indiana, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, and Wisconsin and was formed to advocate for regional passenger rail improvements.

#### **S.4.5 Northern Indiana Commuter Transportation District**

NICTD has set out an ambitious set of improvements in its *20-Year Strategic Business Plan*. Highlights include the following:

- **West Lake Extension.** The West Lake Extension would expand NICTD commuter rail service south into Lake County with new stations in downtown Hammond, South Hammond, and Munster/Dyer. The new line would primarily follow existing rail right-of-way. Funding has been programmed for this \$603 million project, half of which is expected to come from the Federal Transit Administration. The project is expected to facilitate an additional 7,120 average weekday boardings by 2040.
- **Double Tracking.** This project would extend double tracking on the South Shore Line 25.9 miles from Gary to Michigan City. Currently the South Shore Line is double tracked between Chicago and Gary. NICTD considers this \$290 million project necessary to accommodate expected increases in ridership which will in turn necessitate more frequent train service.

### **S.5 SAFETY/CROSSING ISSUES, PROPOSED INVESTMENTS AND IMPROVEMENTS**

While rail is a relatively safe mode of transportation, it is not without risks. Between 2007 and 2016, a total of 245 fatalities were associated with the Indiana rail network. Of these, 133 occurred at rail-highway at-grade crossings, and 107 were trespassers struck by trains on rail rights-of-way. The remaining five were associated with other causes.

Because Indiana has a dense rail network, it has a high concentration of rail-highway at-grade crossings, particularly in the northwest corner of the state. According to the FRA Grade Crossing Inventory System, Indiana is ranked sixth in the nation in the number of public crossings. According to Operation Lifesaver, the state was ranked sixth (tied with Louisiana) in the number of rail-highway at-grade crossing fatalities in 2016.

Within Indiana, railroads are responsible for maintaining rail-highway at-grade crossings, including maintaining any train-activated warning devices and the crossing surfaces. A small percentage of the Railroad Grade Crossing Fund (RRGCF) is used for crossing resurfacing projects. Nine proposed crossing maintenance projects at a cost of \$890,000 are included in this State Rail Plan.

### **S.6 FREIGHT RAIL ISSUES, PROPOSED INVESTMENTS, AND IMPROVEMENTS**

#### **S.6.1 State of Good Repair Issues/Corridor Preservation**

Some rail lines in Indiana are in poor condition and/or have not been upgraded to modern standards. This is particularly true on small (Class III) railroads within the state. Most Class III rail lines were established after Class I railroads sold off low-density, unprofitable rail lines or were created following the bankruptcy and liquidation of predecessor railroads. Because these rail lines were not high priorities, previous owners often deferred maintenance, so they were in poor states of repair when acquired by the Class III operators. These lines do not always have the volume of freight traffic that can generate sufficient revenues to upgrade or maintain the lines in a state of good repair. FRA Track

Class standards can be used as an indicator of rail line condition. Tracks maintained at an FRA “Excepted” condition are in poor condition, as are, to a lesser extent, tracks maintained at the lowest FRA standard, Class 1. About 125 miles of the 4,135 mile Indiana rail network are FRA Excepted track, while 385 miles are FRA Class 1. The current industry standard maximum car weight is 286,000 pounds gross weight (includes the weight of the payload and railcar). Three hundred and forty-six miles of the Indiana rail network cannot accommodate these heavy railcars, which limits the efficiency and competitiveness of these rail lines. Either shippers on these lines must use smaller railcars or they must short-load their railcars. In addition to the track condition, there are roughly 120 bridges in Indiana that cannot accommodate 286,000 pound railcars.

INDOT’s primary tool for providing financial assistance to help maintain threatened rail corridors is the Industrial Rail Service Fund (IRSF), which is funded at about \$2.7 million per year. This funds on average around a dozen projects per year, with an average funding of \$230,000 per project. Between 2012 and 2016, slightly more than three quarters of IRSF funding was used for rail line rehabilitation projects.

Sixty-four rail rehabilitation projects with a cost of \$241 million are included in this State Rail Plan. These projects were either (1) recommended by railroads; (2) drawn from a survey of members conducted by the association, Railroads of Indiana; or (3) identified in regional strategic plans by the Conexus Indiana Logistics Council.

### **S.6.2 Rail Network Access**

From the perspective of Indiana shippers and economic development officials, the extent to which the rail network supports Indiana’s economy in part relates to the ability of Indiana businesses to access the network. Generally, rail access is provided by one of the following:

- Spur or siding connecting directly to the shipper’s location
- Shared spur or siding, such as into an industrial park
- Intermodal terminal, which facilitates transfer of containers or trailers between truck and rail
- Transload facility (including team tracks,) which facilitates transfer of non-containerized freight between truck and rail
- Rail-served marine port, which facilitates transfer between rail and maritime or truck modes

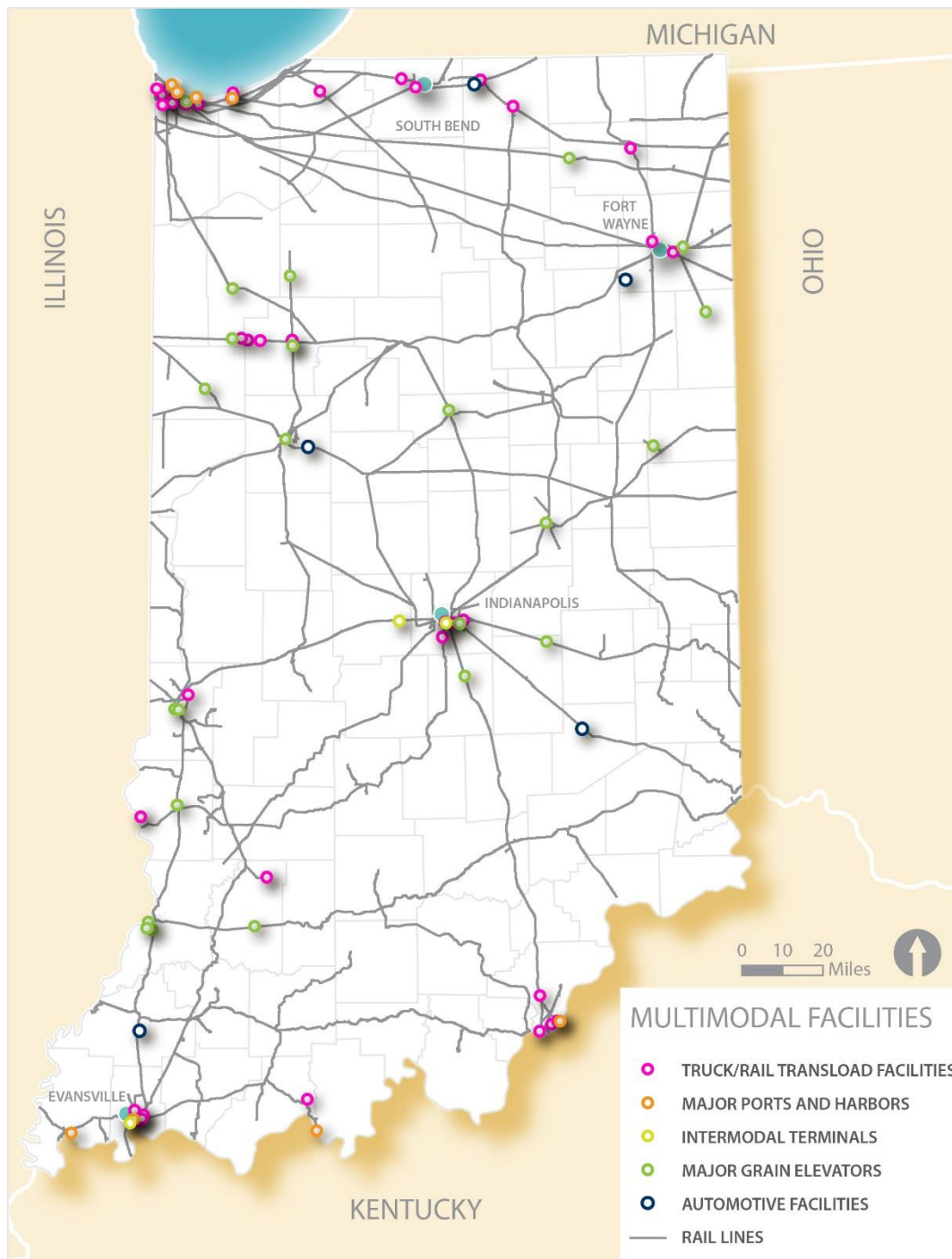
INDOT, the Indiana Economic Development Corporation (IEDC), Ports of Indiana and other organizations are continually seeking to improve rail access. Between 2012 and 2016, the IEDC invested approximately \$4.3 million in industrial access projects, either for spurs to individual businesses or for access to rail-served industrial parks. During the same period, \$2.4 million of IRSF funds (18 percent of the total IRSF funds available) were applied to industrial access improvement projects. During outreach for this State Rail Plan, some stakeholders noted rail could be better integrated into industrial location planning within Indiana, citing instances where industrial parks had been built without considering rail access which resulted in lost economic opportunities. It is usually less expensive to build rail access off low-density rail lines such as those owned by Class II or Class III railroads than off Class I railroad mainlines.

Indiana’s close proximity to Chicago and other gateways where eastern and western railroads connect has discouraged intermodal terminal development in the state. For container shipments moving to or

from the west, the short distances between markets in Indiana and BNSF or Union Pacific intermodal terminals in Illinois or Missouri can make it more advantageous to truck containers.

However, Indiana benefits from non-containerized multimodal facilities. Transload facilities enable the transfer of dry bulk, liquid bulk, and break bulk cargoes between truck and rail. Agricultural producers rely on local (load individual or multiple carloads) and unit loading (loads and entire train) for grain elevators. Automotive ramps allow finished automobiles to be shipped from assembly plants or distributed in local markets. Figure S-3 displays multimodal facilities in Indiana. A total of 19 multimodal improvement projects worth \$202 million are in this State Rail Plan, including potential transload facilities, intermodal terminals, and improvements to rail-served marine terminals. Multimodal facilities allow shippers to benefit from the advantages of multiple modes.

Figure S-3. Rail-Served Multimodal Facilities in Indiana



Source: U.S. Bureau of Transportation Statistics, other sources

## S.7 RAIL SERVICE AND INVESTMENT PROGRAM

The Rail Service and Investment Program represents the “Action Plan” of a state rail plan.



### S.7.1 Short-Range and Long-Range Rail Service and Investment Programs

The short-range and long-range rail service and investment programs represent the service development and infrastructure investments that will enable the state to implement the vision, goals, and objectives included in this State Rail Plan. INDOT's role in intercity passenger rail since 2013 has been to maintain existing services by funding and managing the *Hoosier State*. INDOT has also managed the Indiana Gateway Project, which has improved passenger and freight rail operations to/from Chicago. Going forward, INDOT is working toward improving passenger rail service in the state and will be developing a more specific set of anticipated improvements, particularly for the state-supported *Hoosier State* service. A study examining potential improvements on host railroad lines began in mid-2017 is a first step in this process.

Freight rail projects that INDOT funds or administers are generally selected on an annual basis. Because of the current project selection process, it is not possible to provide phased projects on a four-year or a 20-year basis. Rather, this State Rail Plan presents a four-year short-range investment program consisting of state-funded projects programmed for FY2017. These short-range projects indicate funding source, the level of funding, and the total project cost. They are listed in Appendix B of this document. In addition, programmed Railway-Highway (Section 130 Program) projects through 2020 have been included.

This State Rail Plan also presents an \$883 million long-range investment program for the next 20 years, as detailed in Appendix C and summarized in Table S-3. These projects can be added to the short-range Rail Service and Investment Program as funding is identified.

Projects have been categorized by type and tied to the goals that appear in this State Rail Plan. Categories are listed below.

- **Transportation Effectiveness: Rehabilitation Projects.** These projects are aimed at bringing low density rail lines to a state of good repair or modernizing these rail lines.
- **Economic Development: Multimodal Projects.** These projects facilitate the transfer of freight between truck and rail or rail and maritime modes.
- **Safety: Crossing Projects:** These projects maintain rail-highway at-grade crossings, upgrade safety at crossings or grade separate crossings.
- **Economic Development: Industrial Access Projects.** These projects build or improve access to Indiana businesses.
- **Transportation Effectiveness: Operational Improvements and Connections.** These projects either provide a new connection between rail lines, upgrade capacity of rail lines, or generally improve the fluidity of freight movements on rail lines.
- **Rail Relocation/Quality of Life.** This additional category has been added and represents projects that aim to move rail infrastructure away from densely populated areas, thus reducing externalities such as noise or blocked highway-rail at-grade crossings that results from freight rail operations.

The freight rail long-range Rail Service and Investment Program also considers likely funding by type of project. This analysis assumes that funding levels over the past five years are representative of

likely funding available over the next 20 years. This was considered the most reasonable assumption given the uncertainty over future federal funding levels.

*Table S-3. Summary of Long-Range Freight-Rail Service and Investment Program (Unfunded)*

Type of Projects	Number of Projects	Benefits	Value of Projects for a Cost Estimate Was Available (Millions)	Available Funding based on Past Funding Levels (Millions)
Rail Line Rehabilitation	64	State of good repair, mobility, corridor preservation	\$241	\$80 (\$41 IRSF, \$39 federal)
Multimodal	19	Economic development, access	\$202	\$40 federal
Crossings	24	Safety, mobility, state of good repair	\$171	\$3 for resurfacing from the Railroad Grade Crossing Fund, uncertain for grade separation
Industrial Access	26	Economic development, mobility	\$68	\$27 (\$10 IRSF, \$17 IEDC)
Operational Improvements/Connections	15	Mobility, capacity	\$39	\$8 (\$2 IRSF, \$6 federal)
Quality of Life/Rail Line Relocation	3	Quality of life, real estate	\$53	\$0 (none currently identified)
<b>Total (Excl. duplicates of projects in multiple categories)</b>	<b>148</b>		<b>\$883</b>	<b>\$158</b>



# 1 The Role of Rail in Statewide Transportation (Overview)

## 1.1 PURPOSE AND CONTENT

The purpose of this Indiana State Rail Plan (Rail Plan) is the following:

- Assess the current state of Indiana’s rail system, in terms of extent, performance, needs, issues, and opportunities
- Articulate vision, goals, and objectives that will guide actions and programs in the future and are consistent with other planning efforts in Indiana
- Identify a series of infrastructure projects, policies, and strategies that can advance the vision, goals, and objectives
- Explore alternatives for implementing this State Rail Plan, including potential funding/financing opportunities, policies, and organizational responsibilities/relationships
- Provide an opportunity to engage in a dialogue with stakeholders regarding rail issues and opportunities within the state

This State Rail Plan has been prepared to be consistent with the requirements put forward by the Passenger Rail Investment and Improvement Act (PRIIA) of 2008, as well as subsequent state rail plan guidance issued by the Federal Railroad Administration (FRA) in 2013.<sup>1</sup> Inclusion within a state rail plan helps infrastructure projects to be eligible for federal funding. Table 1.1 summarizes the content of this State Rail Plan.

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<sup>1</sup> <https://www.fra.dot.gov/Page/P0511>.

Table 1.1. State Rail Plan Content

Chapter/Title	Description of Content
Executive Summary	
1. The Role of Rail in Statewide Transportation	This chapter describes the role of rail within the state's transportation system and how Indiana state and local government entities are organized to support rail development. The chapter provides an overview of achievements since the last Rail Plan.
2. The State's Existing Rail System	This chapter describes the Indiana rail system, its current condition, and environmental and economic impacts on the state. It identifies past and future trends that have affected or will affect the Indiana rail system.
3. Proposed Passenger Rail Improvements and Investments	This chapter identifies passenger rail service needs and opportunities. It also describes improvements and investments that have been put forward to address passenger rail service needs and opportunities.
4. Proposed Freight Rail Improvements and Investments	This chapter identifies freight rail service needs and opportunities. It also describes improvements and investments that have been put forward to address freight rail service needs and opportunities.
5. The State's Rail Service and Investment Program	This chapter presents INDOT's vision for railroad transportation, projects and strategies to meet that vision, summary of impacts that would result from the projects and strategies, and a discussion of probable financing scenarios.
6. Coordination and Review	This chapter describes outreach and coordination efforts in developing this State Rail Plan.
Technical Appendices	

## 1.2 MULTIMODAL TRANSPORTATION SYSTEM GOALS

INDOT is currently developing the 2018 – 2045 long range plan. While the new plan is not available for public release at this time, Multimodal Mobility is a new planning category. The draft goals include the following:

- Work with locals to ensure connectivity of regions and economic centers by various modes of travel; Enhance Intermodal connections (rail yards, marine ports, airports and public transportation facilities)
- Reduce Surface Transportation Congestion & Enhance System Reliability
- Support non-motorized modes of Travel

Governor Eric Holcomb recently introduced his plan on “Elevating Indiana to the Next Level”. His five-point plan will:

- **Cultivate a Strong & Diverse Economy by Growing Indiana as a Magnet for Jobs:** We will manage our finances with the discipline that we've shown for the past 12 years. We will grow our 21<sup>st</sup> century economy by investing in and nurturing entrepreneurship, innovation, and technology. We will invest \$1 billion over the next 10 years to make Indiana the capital of innovation and entrepreneurship.
- **Create a 20-year Plan to Fund Roads and Bridges:** Indiana needs a sustainable plan to fund our roads and bridges for the next 20 years. We will establish a plan that preserves what we have, finishes commitments we've made, and invest in new projects for the future that ensures that Indiana remains the Crossroads of America.
- **Develop a 21<sup>st</sup> Century Skilled and Ready Workforce:** We will make sure that our educational resources are properly aligned to produce the skill sets our businesses crave. We will create,

reconfigure, and align workforce development programs and funding so that those needs of today and tomorrow are met.

- **Attack the Drug Epidemic:** We will attack this problem on all fronts: prevention, treatment, and enforcement.
- **Deliver Great Government Service:** Hoosiers deserve to know that their tax dollars are being used responsibly and efficiently. We are setting goals to provide the best service that Hoosiers expect and deserve. Agency leaders will be held accountable for the programs and services we provide.

This Rail Plan also proposes a set of rail-specific vision, goals, and objectives detailed in Chapter 5.

### 1.3 ROLE OF FREIGHT RAIL IN THE INDIANA TRANSPORTATION NETWORK

In 1937 Indiana adopted the motto “Crossroads of America,” referring to Indiana’s central location, as well as to the highways, railroads and other transportation infrastructure that connect Indiana to the rest of America. Indiana businesses still benefit from a robust transportation infrastructure. With 14 interstates, Indiana is first in the nation in interstate highway access. But Indiana has considerable transportation assets across other modes and is an important component of the U.S. rail network. By most metrics used to assess rail access and activity, Indiana is among the more rail-intensive states in the U.S. For example, in 2012, according to the Association of American Railroads, Indiana was ranked as follows:

- 3<sup>rd</sup> in the number of freight railroads
- 9<sup>th</sup> in total rail mileage
- 9<sup>th</sup> in tonnage originated
- 9<sup>th</sup> in tonnage carried
- 4<sup>th</sup> in carloads carried
- 9<sup>th</sup> in rail employment and wages
- 7<sup>th</sup> in coal tons originated and 6<sup>th</sup> in coal tons terminated
- 6<sup>th</sup> in food product tons originated
- 1<sup>st</sup> in primary metal products originated and terminated<sup>2</sup>

Freight rail in Indiana, as in other states is used primarily for long-distance freight moves. Rail is typically slower but less expensive relative to competing modes such as trucking.

Table 1.2 displays rail’s modal share of tonnage from the Freight Analysis Framework (FAF-4.). As shown, rail’s highest modal share is for shipments of coal. Most electricity generated in Indiana is fueled by coal, and most of this coal is shipped to power plants by rail. But rail also has a significant market share for long-haul shipments of other commodities, such as agriculture, plastics and rubber, forest products, and metallic ores. Rail plays a key role in linking Indiana with markets both domestic and foreign. For those industries whose supply chains permit the usage of rail, freight rail service can

<sup>2</sup> Association of American Railroads, State Rankings,  
[https://www.aar.org/Style%20Library/railroads\\_and\\_states/dist/data/pdf/State%20rankings.pdf](https://www.aar.org/Style%20Library/railroads_and_states/dist/data/pdf/State%20rankings.pdf).

provide significant cost savings. The availability of rail also adds to the capacity of the transportation system, so that rail can relieve capacity and reduce maintenance costs on the Indiana roadway system.

**Table 1.2. 2015 Tonnage Rail Modal Share by Distance and Commodity Group for Shipments to and from Indiana**

Commodity	0–99 Miles	100–249 Miles	250–499 Miles	500–999 Miles	1,000 + Miles
Agricultural Products	7%	3%	5%	52%	26%
Food Products, Including Animal Feed	2%	8%	15%	33%	50%
Stone and other Non-Metallic Mineral Products	0%	1%	6%	30%	35%
Metallic Ores	0%	93%	84%	26%	43%
Coal	0%	76%	69%	33%	100%
Chemicals	0%	0%	1%	11%	2%
Plastics and Rubber	3%	9%	19%	37%	76%
Wood, Paper, Forest Products	0%	5%	9%	10%	42%
Metals and Metal Products	0%	2%	6%	16%	24%
Vehicles and Transportation Equipment	21%	25%	17%	15%	19%
Other	0%	1%	8%	11%	18%

Source: Freight Analysis Framework-4, WSP | Parsons Brinckerhoff Analysis

## 1.4 FREIGHT RAIL SERVICES, INITIATIVES, AND PLANS

Freight rail-related initiatives and efforts are underway or have been recently completed in Indiana including those listed below.

### 1.4.1 Federally Funded

**Indiana Gateway Rail** – In 2010 Indiana received a \$71.4 million grant from the American Recovery and Reinvestment Act under the federal High-Speed Intercity Passenger Rail Program to complete eight rail improvements in northwest Indiana between Porter and the Illinois state line. This project has increased capacity—by adding a third track at three locations on Norfolk Southern’s Chicago Line—and operational flexibility for both passenger and freight trains. New crossovers allow trains to move between tracks to pass one another on Norfolk Southern’s Chicago Line. Finally, a passing siding on Amtrak’s Michigan Line at Porter now allows trains to pass each other. The project was completed in March of 2017.

**White River Bridge** – The White River Bridge is located in Greene County, southeast of Terre Haute on a rail line owned by the Indiana Rail Road Company (INRD). Mines, utilities, agricultural producers, and the naval base in Crane, depend on this line. The bridge was over 115 years old, had weight restrictions of less than 286K and speed restrictions of 10 mph, and was within 10 years of being closed to all rail traffic. In 2013, INDOT, in conjunction with the INRD, received an \$8.2 million grant under the federal Transportation Investment Generating Economic Recovery (TIGER) grant program. Added to the federal grant were \$600,000 in state funds, and five million in private funding for the total project funding of \$13.8 million to replace the bridge, which was opened to rail traffic in August 2015.

**Plainville Siding** – In 2014, a \$2.1 million 8,000-foot rail siding was completed on the Indiana Southern Railroad in Daviess County northeast of Vincennes, which was funded in part by a \$1.6 million FRA grant. This siding expands the potential rail operations in the area, enabling expanded service at nearby Boyd Grain, the Bear Run coal mine, and the Duke Energy plant in Edwardsport.

**Port of Indiana - Jeffersonville** – In 2015, the Port of Indiana - Jeffersonville received a \$10 million federal TIGER grant to help fund \$17 million in infrastructure enhancements that will add nearly four miles to the port's existing 11-mile rail network. These enhancements include construction of siding to accommodate unit train delivery to and from the port, and reconfiguration of waterfront railroad infrastructure (including two new rail loops).

### **1.4.2 State Funded**

**Industrial Rail Service Fund** – Between July 2012 and January 2017, Indiana invested slightly over \$14.5 million in short-line/regional railroad infrastructure. This included 62 projects with an average state contribution of \$235,000 per project, in addition to private railroad matching. The total value of these projects was \$44 million.

Over half of these projects included the rehabilitation of track structures, such as replacement of ties, new ballast, and rail replacement. About 22 percent of the funds were used for bridge construction, while another 18 percent were used for projects improving access to serve customers, such as rail spurs or sidings.

In 2013, the Canadian National Railway in cooperation with the INRD opened a container terminal in the Indianapolis area that connects to international shipping services from the Canadian ports at Prince Rupert, Vancouver, Halifax and Montreal, bypassing Chicago. Canadian National Railway and INRD also offer cross-border service for Indiana shippers serving Canadian markets, and service via the Ports of New Orleans, LA, and Mobile, AL, for shippers using the Panama Canal and South American services.<sup>3</sup> While most funding for this project was from private means, \$600,000 in Industrial Rail Service Fund (IRSF) funds were also used.

**Railroad Grade Crossing Fund** – Between July 2012 and June 2016, Indiana invested \$3.3 million in safety improvements at highway-railroad at-grade crossings. This included 150 projects with an average state contribution of about \$22,000 per project. With local contributions, the value of these projects totaled slightly more than \$4.3 million. Approximately two-thirds of the funding was used for improved signage and pavement markings, while almost a quarter was used for improvements to crossing surfaces. The remainder was used for crossing closures, median barriers, lighting improvements, and other measures.

### **1.4.3 Privately Funded**

**Louisville & Indiana Railroad (LIRC), CSX Joint Infrastructure Upgrade** – In return for a permanent easement from LIRC allowing CSX to operate over the 106-mile rail line between Indianapolis and Louisville, KY, in 2015, CSX committed to investing \$100 million to install new rail, upgrade the rail bed structure, and improve bridges on the line. Train speeds and the number of daily trains will

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<sup>3</sup> <http://www.inrd.com/intermodal.aspx>.

increase as these track improvements are completed. This line provides additional operational flexibility to CSX operations in the region, allowing CSX to avoid congestion in Cincinnati, OH.

**Third Main Goshen to Elkhart** – In 2014 and 2015, Norfolk Southern invested \$11 million to construct a 3-mile segment of a new third main track on its Chicago Line between Goshen and Elkhart to relieve rail traffic congestion in the area. The project also installed new crossovers and signals.

## 1.5 ROLE OF PASSENGER RAIL IN INDIANA TRANSPORTATION NETWORK

Two types of passenger rail operate in Indiana and are contained in this State Rail Plan.

- **Commuter rail** is rail service whose primary purpose is to move commuters who make the same trip each work day to a center city, with most ridership happening during peak travel times.
- **Intercity passenger rail** is passenger rail transportation that connects metropolitan areas.

The NICTD carries passengers between Lake, Porter, La Porte, and St. Joseph Counties in Indiana and Chicago, Illinois. According to a publication by NICTD and the Northwest Indiana Regional Development Authority, NICTD carries about 9 percent of Lake County-to-Chicago commuters and 12 percent of Porter County-to-Chicago commuters.<sup>4</sup> Mileage avoided by NICTD riders accounts for an equivalent of 7.8 percent of peak-hour Lake County-to-Chicago vehicle-miles traveled and 3.7 percent of peak-hour Porter County-to-Chicago vehicle-miles traveled. By removing a percentage of commuters from northwestern Indiana roadways during times of peak demand, NICTD reduces congestion and improves mobility. It also ties the economy of northwest Indiana to Chicago, which improves economic efficiency.

The modal share of intercity passenger rail in Indiana is relatively small. Hoosiers generate about 88.5 million long-distance trips (trips over 60 minutes with free flow traffic) per year, of which approximately 150,000 are on Amtrak trains, arriving or leaving stations in Indiana.<sup>5</sup> Therefore, intercity passenger rail has about 0.17 percent of the long-distance trip market in Indiana.

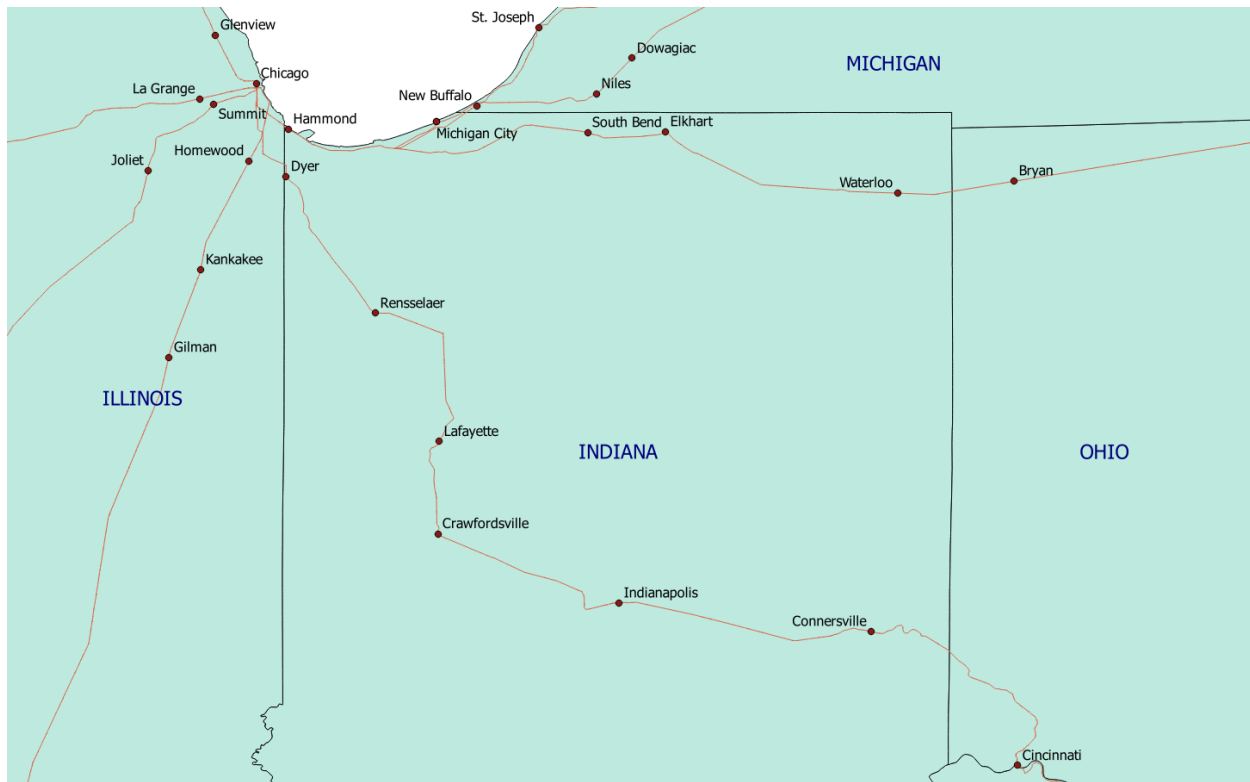
Not all Hoosiers have access to intercity passenger rail service, particularly in the southern part of the state. Indiana residents are served by 25 Amtrak intercity passenger rail stations, 11 of which are within Indiana and the remaining within Illinois, Michigan, and Ohio within 30 miles of the Indiana state border. Figure 1.1 shows these Amtrak stations.

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<sup>4</sup> Northern Indiana Commuter Transportation District, Northwest Indiana Regional Development Authority, *West Lake Corridor and South Shore Line Strategic Planning Investments: A Regional Benefits Analysis*, January 27, 2014.

<sup>5</sup> According to the FHWA National Household Travel Survey (NHTS) residents of Indiana generate about 8 billion trips per year. Of these, roughly, 1.1 percent are “long-distance” according to the Transportation Research Board *NCHRP Report 735 – Long-Distance and Rural Travel Transferable Parameters of Statewide Travel Forecasting Models*. Amtrak annual state profiles suggest that typical annual Indiana ridership is around 150,000 trips as measured by on and offs at Indiana stations. <https://www.amtrak.com/state-fact-sheets>.

Figure 1.1. Amtrak Stations within a 30 Mile Radius of Indiana



Source: National Transportation Atlas Database, WSP | Parsons Brinckerhoff Analysis

According to the 2010–2014 American Community Survey (ACS) five-year estimates, 2,056,111 Indiana residents live in a census block group within a 10-mile radius of an Amtrak station, constituting 31.4 percent of the statewide population. This includes Indiana residents who are within 10 miles of an Amtrak station that is located outside the Indiana state border.

According to the same survey, 4,369,488 residents (or 66.8 percent of the statewide population) reside within 30 miles of an Amtrak station. This includes Indiana residents who are within 30 miles of an Amtrak station located outside the Indiana state border. These are shown in Table 1.3).

Table 1.3. Indiana Population Served by Intercity Passenger Rail

Radius	Population	Percentage of State
10 miles	2,056,111	31.4%
30 miles	4,369,488	66.8%

Source: American Community Survey, WSP | Parsons Brinckerhoff Analysis

The availability of intercity passenger rail improves the livability of Indiana communities by increasing the number of transportation options and by providing a transportation option that some prefer.



## 1.6 PASSENGER RAIL SERVICES, INITIATIVES AND PLANS

### 1.6.1 Passenger Rail Services

NICTD provides commuter rail service within Indiana, operating 43 trains each weekday on the 90-mile South Shore Line between Millennium Station in downtown Chicago and South Bend International Airport. Amtrak provides intercity passenger services. Table 1.4 displays a summary of Amtrak's routes with stations in Indiana.

*Table 1.4. Intercity Passenger Routes Serving Stations in Indiana*

Route	Service Frequency (each direction)	End Point Stations	Stations in Indiana
Hoosier State	One train four days per week	Indianapolis, IN and Chicago, IL	Indianapolis, Crawfordsville, Lafayette, Rensselaer, Dyer
Cardinal	One train three days per week (opposite Hoosier State schedule)	New York, NY and Chicago, IL	Connersville, Indianapolis, Crawfordsville, Lafayette, Rensselaer, Dyer
Capitol Limited	One train daily	Washington, DC and Chicago, IL	Waterloo, Elkhart, South Bend
Lake Shore Limited	One train daily with cars to/from Boston and New York coming together at Albany-Rensselaer, NY	Boston, MA, New York, NY and Chicago, IL	Waterloo, Elkhart, South Bend
Wolverine	Three trains daily, but two stop at Hammond –Whiting and Michigan City northbound, two stop at Hammond-Whiting southbound, one stops at Michigan City southbound	Chicago, IL and Pontiac, MI	Michigan City, Hammond-Whiting

Source: [amtrak.com](http://amtrak.com), [www.hoosierstatetrain.com](http://www.hoosierstatetrain.com)

In addition, several Amtrak routes pass through northwest Indiana without any stations located in the state. Indiana residents that would like to use these services could access stations in Michigan or Illinois. These routes are summarized in Table 1.5.

*Table 1.5. Intercity Passenger Routes Passing through Indiana without Stations in the State*

Route	Service Frequency (each direction)	End Point Stations	Stations in Indiana
Blue Water	One train daily	Chicago, IL and Port Huron, MI	Does not stop in Indiana. Closest stations are Chicago, IL; New Buffalo, MI; and Niles, MI
Pere Marquette	One train daily	Chicago, IL and Grand Rapids, MI	Does not stop in Indiana. Closest stations are Chicago, IL and St. Joseph-Benton Harbor, MI

Source: Amtrak

### 1.6.2 Intercity Passenger Rail Initiatives and Plans

**Hoosier State Service** – Congress voted to end federal support for the Hoosier State and other Amtrak routes of less than 750 miles effective October 2013. The State of Indiana partnered with online local governments to fund Hoosier State service operating and capital costs not covered with ticket revenue. The Indiana legislature for the first time, has granted a line item in the biennial budget to continue funding through June 2019. Online communities have also agreed to continue supporting the service. Indiana was the first state after the passage of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) to exercise the right to consider multiple operators for intercity passenger rail routes.



Iowa Pacific Holdings provided train equipment and maintenance, on-board services, and marketing for the Hoosier State service between July 2015 and February 2017. Currently, Amtrak provides all services for the Hoosier State.

**Northern Indiana/Ohio Passenger Rail Corridor** – The Northern Indiana Passenger Rail Association has commissioned the *Northern Indiana/Ohio Passenger Rail Corridor Study and Business Plan* to investigate the feasibility of passenger rail service on a rail corridor between Chicago and Columbus, OH, which would serve the Indiana communities of Gary, Valparaiso, Plymouth, Warsaw, and Fort Wayne. This organization has initiated an environmental impact statement, due to be completed the last quarter of 2017.

**Midwest Regional Rail Plan** – The FRA is leading the Midwest Regional Rail Plan—a multi-state planning effort to develop a comprehensive vision and governance model for an integrated regional rail network to advance passenger rail planning, procurement, and operations in the Midwest. The completion of this study was a requirement of PRIIA. INDOT is participating in the study as a primary stakeholder. It is one of a series of regional studies that the FRA is completing, including an earlier plan for passenger rail in southwestern states.

### 1.6.3 Commuter Rail Initiatives and Plans

**NICTD Expansions and Improvements.** The following investments and improvements are planned and being studied for the NICTD service:

- Add double track between Gary and Michigan City
- Increase capacity through the area shared with Metra south of Millennium Station
- Construct West Lake Corridor Extension from Hammond to Dyer, which would use electric powered trains on a new right-of-way that would be elevated in some locations and at ground level for others
- Realign track into Michigan City, so that it is no longer embedded street running track but instead on a separate right-of-way with a new station
- Realign track into South Bend Airport, so that trains travel straight into the airport, rather than the existing circuitous route
- Improve stations in Gary and Portage/Ogden Dunes

## 1.7 INSTITUTIONAL GOVERNANCE STRUCTURE OF RAIL IN INDIANA

### 1.7.1 INDOT's Legislative Rail Authority and Organization

For the purposes of this State Rail Plan, INDOT serves as both the State Rail Transportation Authority and State Rail Plan Approval Authority, which are responsible for preparing and approving this State Rail Plan, respectively. Designation of these authorities is required for the FRA's state rail planning purposes.

INDOT gained legislative authority to fund and plan rail projects in 1975 as part of the Indiana State Rail Preservation Law. This legislation under I.C. 8-3-1.5 gave INDOT the authority to administer and

coordinate a state rail plan, seek federal financial assistance for rail service continuation, employ sufficiently trained and qualified personnel, maintain adequate programs to ensure proper disbursement of federal funds, provide financial assistance to operate and maintain railroads, buy and sell railroad properties if need be, and cooperate with other states regarding the sale or purchase of railroad properties.<sup>6</sup>

In 1979, the Indiana legislature also established the Commuter Rail Service Fund to fund commuter rail within the state. In 1981, the legislature added the Electric Rail Service Fund, which was established to fund any commuter rail transportation performed by electrically powered railroads.<sup>7</sup> NICTD is currently the only commuter rail service that qualifies for either of these funds. The Commuter Rail Service Fund receives 0.123 percent of the state's general sales and use tax, while the Electric Rail Service Fund is generated from property tax on a railroad company's distributable property that provides service within a commuter transportation district. NICTD also receives a 12.34 percent set aside from the Indiana Public Mass Transportation Fund, which is authorized each year by the legislature to receive revenue from the state's general fund.

In 1979, the Indiana legislature authorized the Railroad Grade Crossing Fund (I.C. 8-6-7.7-6.1) to improve the safety at highway-railroad at-grade crossings by providing funding for railroad crossing safety improvements throughout the state.

In 1982, the Indiana legislature (I.C. 8-3-1.7) established the IRSF to provide loans to railroads in order to purchase or rehabilitate property. In 1995, the legislature modified the program to give INDOT the authority to grant funds to railroads owned by port authorities to rehabilitate railroad infrastructure. In 1997, the authority for INDOT to grant money was extended to Class II and Class III railroads.

INDOT was authorized to provide highway funding for Hoosier State service between October 2013 and July 2015. Additional funding provided through tax amnesty expired on June 30, 2017, and was part of the two-year budget for FY2016–2017. Hoosier State service subsequently received a line item designation in the Indiana budget to be funded through June 30, 2019.

Table 1.6 displays average annual funding over the past five years for the state programs described above. INDOT funding for *Hoosier State* service does not reflect the full five years, since INDOT took over funding the service in October 2013. Funding levels for the IRSF and the Railroad Grade Crossing Fund reflect averages by Indiana fiscal year, which ends June 30 each year, whereas NICTD funding reflects averages by calendar year.

**Table 1.6. Indiana State Funding by Program**

Program	Average State Funding Fiscal Year 2012 - 2016
Industrial Rail Service Fund	\$2.6 million
Railroad Grade Crossing Fund	\$0.7 million
Hoosier State Service Support*	\$3.0 million
NICTD Support**	\$22.2 million

\*INDOT took over funding for Hoosier State service October 1, 2013

\*\*Represents average by calendar year

<sup>6</sup> <http://statecodesfiles.justia.com/indiana/2016/title-8/article-3/chapter-1.5/chapter-1.5.pdf>

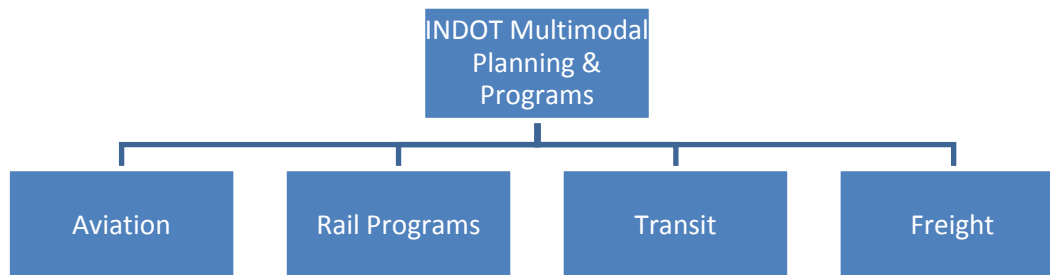
<sup>7</sup> Ibid.

Freight and intercity passenger rail programs authorized under Indiana's legislative authority are administered by the INDOT Rail Programs Office, which is dedicated to preserving and developing freight and passenger corridors throughout the state of Indiana. The Rail Programs Office administers the Indiana IRSF and the Railroad Grade Crossing Fund programs, as well as enforces Indiana State Law in regards to highway-rail at-grade crossings. The Rail Programs Office performs rail planning and administers rail-related federal grants for which INDOT is the grantee.

The Rail Programs Office is the primary author of this State Rail Plan, but the project review committee also includes the freight manager from the Freight Office and the Director of the Multimodal Planning & Programs Division. Staff from the Freight Office and the Rail Programs Office work together on a number of initiatives. For example, staff from the Rail Programs Office are currently assisting the Freight Office with the Indiana Freight Plan, required under the 2015 Fixing America's Surface Transportation (FAST) Act.

State financial assistance and involvement in the NICTD service is administered through the INDOT Office of Transit, which provides financial and technical assistance to transit systems across the state and administers millions of dollars in state and federal funds through grant programs. Contract management for the Hoosier State service, along with freight rail, is part of the Rail Programs Office. Both offices are part of INDOT's Multimodal Planning and Programs division, the organization of which is displayed in Figure 1.2.

*Figure 1.2. Organization of the INDOT Multimodal Planning & Programs Division*



Several other offices within INDOT affect rail in Indiana as well. The federal highway-rail grade crossing safety improvement fund (commonly referred to as Section 130) is administered under the INDOT Office of Traffic Safety, which is part of the INDOT Division of Traffic Engineering.

The INDOT Utilities and Railroads Division coordinates with utility or railroad companies wherever INDOT roadway projects or railroad improvement projects require project coordination and an agreement/contract between the two parties to complete the construction.

### **1.7.2 Institutional Governance Structure of Rail Programs beyond INDOT**

#### **OTHER STATE AGENCIES**

Beyond INDOT, several other state agencies play a role in rail programs. The Indiana Economic Development Corporation's Industrial Development Grant Fund assists municipalities and other entities with infrastructure improvements needed to serve proposed project sites. Among the infrastructure projects eligible for funding are the construction, extension, or completion of rail spurs and sidings. Potential projects are evaluated by, among other criteria, the extent to which they attract investment and employment to Indiana communities.

The Ports of Indiana was created by the Indiana General Assembly in 1961 to "promote the agricultural, industrial, and commercial development of the state and to provide for the general welfare by the construction and operation, in cooperation with the federal government, or otherwise, of a modern port." It is a quasi-governmental entity. The Ports of Indiana owns and operates the port facilities and related properties at Burns Harbor, Jeffersonville, and Mount Vernon. Ports of Indiana is self-supporting in terms of operating funds and can invest in rail at the port facilities.

#### **LOCAL AND REGIONAL AGENCIES**

A range of local and regional government entities can support rail in Indiana, both through their own funding sources and by applying for federal funding. A number of organizations within Indiana play a coordinating role for transportation issues, including rail.

Metropolitan planning organizations (MPOs) also play a coordinating role. There are 14 MPOs in Indiana. MPOs are required for metropolitan areas with over 50,000 inhabitants in order to receive certain types of federal highway and mass transit funding. MPOs prepare 20-year transportation plans and three- to five-year transportation improvement plans, as well as provide technical assistance for project planning and implementation. Through their planning processes, they cooperate with state and local jurisdictions, and rail projects are included among the projects with which MPOs may be involved. Several Indiana MPOs are responsible for jurisdictions that span across the state borders to towns and counties in adjoining states. (Appendix A, Figure A.1 displays MPOs in Indiana.)

Fifteen regional councils are located in Indiana, covering most of the state. The Indiana legislature created these regional councils to perform economic development planning with funding from the U.S. Department of Commerce. Given rail's significant role in economic development, rail can be relevant to these organizations' activities. (Appendix A, Figure A.2 displays regional councils in Indiana.)

The Indiana legislature created NICTD in 1980. It is governed by a Board of Trustees, with two board members from each of the four Indiana counties served by the South Shore Line, as well as two board members appointed by the governor of Indiana.

#### **MULTI-STATE ORGANIZATIONS**

Indiana is also active in several interstate passenger rail organizations that allow multiple states to cooperate on regional issues or to address national issues that are common across states that support passenger rail.

**Midwest Interstate Passenger Rail Commission** – In 2000, the Midwest Interstate Passenger Rail Commission (MIPRC) formed to advocate for regional passenger rail improvements. The commission comprises state leaders in Indiana and across the other Midwestern states of Illinois, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, and Wisconsin. Indiana legislators serve on the commission as well as the governor’s designee, usually the INDOT commissioner or the director of INDOT Multimodal Planning & Programs.

MIPRC leads a variety of activities to inform stakeholders, the public, and elected officials on current and future passenger rail projects in the region. This includes their annual meeting, which in 2016 featured tours and discussions of ongoing work on the Chicago to St. Louis corridor and other state-by-state program updates. MIPRC also hosts other advocacy initiatives such as the October 2016 webinar on the *Future of Intercity Passenger Rail in the Midwest* and a regional Universities and Colleges Passenger Rail Survey, both of which further the organization’s mission to advocate and assess passenger rail services and markets in the region.

MIPRC also fulfills a role in advocating for existing Amtrak and passenger rail services. MIPRC is actively involved in keeping elected officials informed with state and federal passenger rail policies and legislation to promote a more efficient regional passenger rail network for the Midwest.

To date, MIPRC’s efforts have led to incremental corridor improvements in the Midwest—namely the Chicago to St. Louis and Chicago to Detroit/Pontiac corridors.<sup>8</sup>

**States for Passenger Rail Coalition** – INDOT is a member of the States for Passenger Rail Coalition. The coalition’s mission is to promote the development, implementation, and expansion of intercity passenger rail services with involvement and support from state governments. The coalition provides a voice for state governments that support passenger rail and is recognized as the “go to” organization for national policy development by federal agencies and congressional staff (for committees of jurisdiction).

**State Amtrak Intercity Passenger Rail Committee** – The FAST Act authorized the State Amtrak Intercity Passenger Rail Committee, which is composed of state intercity passenger rail service sponsors, Amtrak, and the FRA. It provides a forum for resolving issues and progressing intercity passenger rail services. The committee is important to timely resolution of cost-sharing issues, and as a forum for policy review and coordination among the parties. As a sponsor of Hoosier State service, INDOT is represented on this committee.

## 1.8 PUBLIC FUNDING AND FINANCING OF RAIL PROJECTS

The nature, availability, and sources of funding for rail depends upon the type of rail service. Freight railroads within Indiana are generally private, for-profit businesses. The operating costs of freight rail services are covered by shipper revenues for those services. By contrast, revenues from commuter rail and intercity passenger rail operations do not cover operating costs and must be subsidized.

Most capital costs on freight rail lines are privately funded. Railroads pay for capital maintenance, rolling stock, and system expansion projects. But freight railroads provide public benefits by diverting

<sup>8</sup> Midwest Regional Rail System: Executive Report. September 2004. <http://modot.org/pdf/newsandinfo/railmidwest.pdf>

freight from highways and supporting economic development, so in some cases, capital projects of freight railroads are supported by the public sector. Capital projects to support commuter and intercity passenger rail are generally publicly funded.

Within Indiana, the public sector provides funds for improvements to rail-highway at-grade crossings, but railroads are responsible for maintaining these crossings, including maintaining crossing surfaces.

### **1.8.1 State Rail Funding in Indiana**

#### **INDUSTRIAL RAIL SERVICE FUND**

The IRSF is intended to assist with infrastructure improvements for Class II and III railroads to help maintain and increase business shipping levels on these rail lines, and to assist with funding needed for track infrastructure improvements related to new business development on the line. Annual funding is approximately \$2.6 million. This fund, managed by INDOT, receives a percentage of the state sales tax, as mandated by I.C. 6-2.5-10-1(4). Revenue also comes through repayment of IRSF loans. The current maximum IRSF grant is \$300,000. Grants may not exceed 75 percent of the total cost of the project. The fund may also be used to pay operating expenses and for rail planning by INDOT. The fund receives 0.031 percent of the state sales tax.

#### **RAILROAD GRADE CROSSING FUND**

The Indiana legislature established the Railroad Grade Crossing Fund (RRGCF) (I.C. 8-6-7.7-6.1) to increase safety at rail-highway at-grade crossings. Local governments are eligible to apply for funding to enhance safety at rail-highway intersections through the RRGCF with a 100 percent reimbursement for materials up to \$40,000. Class II and Class III railroads and port authorities may also apply for RRGCF as well, however they are required to provide a 50 percent financial match for sight obstruction removal and grade crossing surfacing projects.

While the state legislation allows RRGCF monies to be used for both passive and active (train-activated) crossings, the amount of available funds effectively limits the type of improvements at crossings to passive (signage, sight obstruction removal and resurfacing projects).

The INDOT Rail Programs Office also offers the Crossing Closure Program as part of the RRGCF. A community can currently receive between \$10,000 and \$20,000 to close a crossing, based in part on the FRA-predicted accident rate<sup>9</sup> for the crossing. Funding for the RRGCF was \$500,000 in FY 2015–2016 and \$750,000 in FY 2016–2017.<sup>10</sup> In 2016, awards were given to 24 local public agencies and railroad companies.<sup>11</sup> Funding for FY2018 and FY2019 will continue at \$750,000 per year.

#### **HOOSIER STATE SERVICE FUNDING**

The tax amnesty program of 2015 allowed INDOT to be reimbursed up to \$6 million to operate *Hoosier State* service during the 2016–2017 biennium budget. The tax amnesty program allowed delinquent taxpayers the ability to repay back taxes without penalties, interests or fines. Other portions of the

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<sup>9</sup> Federal Railroad Administration, Office of Safety Analysis. The accident rate can be computed online at <http://safetydata.fra.dot.gov/webaps/>

<sup>10</sup> Source: [http://www.in.gov/sba/files/AP\\_2015\\_C\\_5\\_2\\_Trans\\_Details.pdf](http://www.in.gov/sba/files/AP_2015_C_5_2_Trans_Details.pdf)

<sup>11</sup> Source: [http://www.in.gov/indot/files/FY16\\_Grade\\_Crossing\\_Fund\\_Recipients.pdf](http://www.in.gov/indot/files/FY16_Grade_Crossing_Fund_Recipients.pdf)



amnesty fund go to paying Indiana's Regional Cities Initiative, an economic development program, and the state's general fund. INDOT's legislative authority to use tax amnesty funds for Hoosier State service for the \$3 million per year ended June 30, 2017. For the first time, Hoosier State service funding for \$6 million was included as a line item in the biennial budget that ends June 30, 2019.

### INDIANA COMMUTER RAIL FUNDING

In 2016, NICTD was budgeted to receive \$25 million in funds from the state of Indiana, a little over half of which are for operating expense and the rest for capital expenses. In 2015, state funds covered about 29 percent of the service operating expense. State funding for NICTD comes from the following:

- The Public Mass Transportation Fund receives funding from the state's general fund, which is distributed to transit systems each year using a performance-based formula based on each system's operating expenses, passenger trips, and vehicle-miles. NICTD, being the only rail transit system in the state, receives a set-aside percentage (12.34 percent) of the fund's total amount available. The funding can be used for both capital and operating expenses. NICTD received about \$5 million from this fund in 2017.
- The Electric Rail Service Fund receives revenue from property taxes on a railroad company's distributable property<sup>12</sup> that provides service within a commuter transportation district established under I.C. 8-5-15. In 2017, NICTD received about \$144,000 from this fund.
- The Commuter Rail Service Fund/Sales Tax is available to commuter transportation districts established under I.C. 8-2-15, for use to maintain, improve and operate commuter rail service. This fund receives 0.123 percent of the state's general sales and use tax revenue. The tax is to be used only for debt financing for long-term capital needs. Revenues for this fund are collected from the indefinite-situs tax on distributable property of railroad car companies (I.C. 6-1.1-8 35). NICTD received about \$21.4 million from the Commuter Rail Service Fund in 2017.

### RAILROAD CROSSING REMEDIATION PROJECTS

In 2017, the Indiana legislature passed House Bill No. 1002, a transportation infrastructure funding bill. Included within this transportation bill is Chapter 8 entitled "Railroad Crossing Remediation Projects". The purpose of this legislation is to provide an opportunity for INDOT to seek an additional source of financing for railroad crossing projects that are determined to be in critical need. Guidelines for program administration were not established by the time this State Rail Plan went to print, since the legislation was only recently passed.

### OTHER INDIANA FUNDING SOURCES

#### BUILD INDIANA FUND

The Build Indiana Fund (BIF) can be used to fund a wide range of projects. BIF distributes gaming revenues (from casinos and racetrack/casinos) and lottery revenues to public agencies in Indiana to

<sup>12</sup> State Assessed Distributable Property – Because utilities and railroads typically cross township and county lines, the Indiana Department of Local Government Finance is charged with assessing the value of utilities and railroads in Indiana. The department values a company's entire enterprise statewide and then distributes the assessed value to each county in which the company operates. The distribution is allocated based on a percentage of the company's total operation in the county by township/taxing district. Source: <http://www.in.gov/dlgf/2486.htm>

use for capital projects. BIF has been used to fund transportation projects, including rail. It received \$250 million in FY 2017 revenues.

#### **INDIANA ECONOMIC DEVELOPMENT CORPORATION**

The Indiana Economic Development Corporation (IEDC) offers an array of business tax incentives, corporate tax credits, and economic development programs for companies creating new jobs and investment in Indiana. One of IEDC's grant programs is the Industrial Development Grant Fund, which can help with off-site infrastructure improvements. This and other IEDC programs (including a tax-exempt bond program) can be used to fund or finance rail improvements that benefit the state and local economy.

### **1.8.2 Federal Funding Sources**

#### **RAILWAY-HIGHWAY CROSSINGS PROGRAM (SECTION 130)**

The INDOT Office of Traffic Safety administers this federal-aid program, which is authorized by United States Code Title 23, Section 130. The goal of this fund, commonly referred to as Section 130, is to reduce the crash risk of the most hazardous public rail-highway at-grade crossings. Since 1975, the number of crashes at public crossings in Indiana has declined dramatically.

Section 130 funds are typically used to install train-activated warning bells, flashing lights, overhead cantilevers, gates, and constant warning time circuitry at rail-highway at-grade crossings on the state and local highway system. (Section 130 funds cannot be used at private crossings.)

Typical railway-highway crossing upgrades using Section 130 funds fall into two categories:

- At crossings with passive protection (such as cross bucks and/or stop signs), a Section 130 safety project would install train-activated warning devices (e.g., warning bells, flashing lights, overhead cantilevers with flashing lights, gates, and constant warning time).
- At crossings with existing train-activated protection (such as flashing lights and/or gates), a safety project would upgrade the existing signal equipment, add four-quadrant gates, install an overhead cantilever with flashing lights, upgrade circuitry to add constant warning time, modernize adjacent highway traffic signals, add a median barrier (to prevent motorists from driving around lowered gates) or other enhancements to reduce crash risk at the highway-rail crossing.

The number of Section 130 crossing upgrades in Indiana is roughly 20–23 crossings per year

Each year INDOT considers crossings to upgrade from a short list of crossings considered to be the most risky. The process does not involve a “call for projects,” since the initial selection of risky crossings is determined by the hazard index, a data-driven determination by INDOT. The hazard index considers the characteristics and traffic carried by the roadways and rail lines as well as the accident history of the crossings. The crossings with the highest hazard index are investigated in greater detail. The process incorporates the concerns of local officials and citizens, new development issues (such as changes of traffic patterns), and rail corridor projects.



Seven criteria are applied to decide which crossings to upgrade each year:

- Hazard index
- Type of improvement selected
- Type of protection already on corridor
- Type of development near the rail-highway at-grade crossing
- Motorist expectancy about train movements
- Type of highway
- Public/local authority interest or comments on safety of the crossing

### TRANSPORTATION INVESTMENT GENERATING ECONOMIC RECOVERY (TIGER) GRANT PROGRAM

Beyond railway-highway safety improvements, over the past seven years, the most frequently used federal funding source for rail projects has been the TIGER grant program.

The TIGER grant program has been a highly competitive program that provides funding for road, rail, transit, bike/pedestrian, and port projects that support economic development, state of good repair, quality of life, sustainability, and safety. The FY2017 federal budget approved \$500 million for the program. Since the program started, approximately 21 percent and 28 percent of its funding has gone to freight rail and transit projects, respectively.

Past freight rail projects have varied in size and scope, ranging from under \$10 million to up to \$100 million to address freight rail congestion in the Chicago area. The following TIGER grants have been awarded for rail-related projects in Indiana since the previous rail plan:

- The White River Freight Railroad Bridge Replacement project received \$8,245,000 in 2014 to replace a 110-year-old railroad bridge on the Indiana Rail Road.
- The Ports of Indiana–Jeffersonville Truck-to-Rail and Rail-to-Water Improvements project received \$10.0 million in 2015 to build a double-rail loop track, construct a rail siding extension, a truck-rail transload facility, as well as other maritime improvements.

Demand for TIGER grant funding exceeds available funds. Applications representing at least \$300 million in rail-related projects in Indiana have been submitted to the TIGER grant program compared to the \$21 million in TIGER grant awards since the program began in 2009.

### NATIONAL HIGHWAY FREIGHT PROGRAM (FAST ACT SECTION 1116; 23 USC 167)

The most recent transportation authorization bill—the 2015 FAST Act—included several new rail programs.

Funded at \$1.1 to \$1.5 billion annually for federal FY16 through FY20, the new National Highway Freight Program is intended to improve the efficient movement of freight on the National Highway Freight Network<sup>13</sup>, and support investment in infrastructure and operational improvements that

<sup>13</sup> The FAST Act requires the establishment of a National Highway Freight Network, which will consist of the following components: The Primary Highway Freight System (PHFS); Critical Rural Freight Corridors; Critical Urban Freight Corridors; and those portions of the Interstate System that are not part of the PHFS.

The FAST Act designates the PHFS and requires FHWA to redesignate it every five years. It also provides for designation of Critical Rural Freight Corridors and Critical Urban Freight Corridors. [23 USC 167(d)-(f)]

strengthen economic competitiveness, reduce congestion, reduce the cost of freight transportation, and improve safety. While the program is focused on highway projects, up to 10 percent of a state's apportionment can be spent on rail, port, and intermodal projects.

Eligible projects include a wide range of activities, including but not limited to: planning, environmental review, environmental mitigation, acquisition of real property, acquisition of equipment, implementation of intelligent transportation systems, border security technology, resiliency projects, and construction of highway, rail, port, and intermodal projects, including highway-rail grade separations.

### **INFRASTRUCTURE FOR REBUILDING AMERICA (INFRA) GRANT PROGRAM**

INFRA is a grant program established by the FAST Act to provide funding for the Nationally Significant Freight and Highway Projects (NSFHP). INFRA is a competitive grant program similar to TIGER, but is focused specifically on freight: highway, rail and intermodal projects of regional or national significance. Its four goals are:

- Support economic vitality on a national or regional level (including improving safety, mobility, and state-of-good repair on transportation facilities)
- Innovation in project design or delivery
- Utilization of non-federal funds for infrastructure
- Promoting accountability for performance outcomes for federal grant recipients

Funding has been authorized under the FAST Act through FY20. Funding for the current combined FY17-18 round (applications due November 2, 2017) is \$1.56 billion. This includes large projects for FY2017, large and small projects for FY2018. The U.S. Department of Transportation (USDOT) announced grantees of small INFRA projects in August 2017. A 40 percent match is required, some of which may be met with other federal funds (up to a maximum of 80 percent federal funds).

As with TIGER, INFRA (formerly FASTLANE) is oversubscribed, with 212 applications requesting a total of \$9.8 billion in the first year of the program (FY16), during which 18 grantees received \$768 million in awards<sup>14</sup>. About \$306 were for rail-related projects. The Ports of Indiana-Burns Harbor received a \$10 million grant from the FY2017 small projects grant program. Among other improvements, this project will establish a new rail yard and will connect the rail yard to the port's main terminal.

### **FAST ACT FRA PROGRAMS**

The FAST Act authorized \$2.2 billion over five years starting federal FY2016 for three new FRA competitive grant programs.

- *Consolidated Rail Infrastructure and Safety Improvements (Sec. 11301)* – Goals are to improve the safety, efficiency, and reliability of passenger and freight rail systems. Eligible activities include a wide range of capital, regional and corridor planning, environmental analyses, research, workforce development, and training projects. Over \$1.1 billion was authorized over FY2016–2020, with \$68 million appropriated to the program in FY2017.

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<sup>14</sup> This is based on the "Proposed FY2016 FASTLANE Project Awards" ([http://transportation.house.gov/uploadedfiles/fastlane\\_project\\_awards\\_7.1.pdf](http://transportation.house.gov/uploadedfiles/fastlane_project_awards_7.1.pdf)) and is subject to revision.

- *Federal-State Partnership for State of Good Repair (Sec. 11302)* – This program is intended to reduce the state-of-good-repair backlog on publicly owned or Amtrak-owned infrastructure, equipment, and facilities. Eligible activities include capital projects to (1) replace existing assets in-kind or with assets that increase capacity or service levels, (2) ensure that service can be maintained while existing assets are brought into a state of good repair, (3) bring existing assets into a state of good repair. Approximately \$1.0 billion has been authorized FY2016–2020 with \$25 million appropriated to the program in FY2017.
- *Restoration and Enhancement Grants (Sec. 11303)*: Created to provide operating assistance to initiate, restore, or enhance intercity passenger rail transportation. Grants are limited to three years of operating assistance per route and may not be renewed. Authorized at \$20 million annually through FY2020. Five million was appropriated to the program in FY2017.

### POSITIVE TRAIN CONTROL IMPLEMENTATION GRANT PROGRAM

Section 3028 of the FAST Act authorized funding for implementation of Positive Train Control (PTC), at \$199 million for federal FY2017. Selection criteria for this competitive grant program include safety as well as promoting economic competitiveness and enhancing quality of life and economic opportunity. A 20 percent local match is required. For FY2016, the FRA awarded \$25 million in competitive grants for PTC implementation. For FY2017, \$197 million in grants was given to 17 projects in 13 states.

### RAILROAD SAFETY INFRASTRUCTURE IMPROVEMENT GRANT

In federal FY2016, Congress appropriated \$25 million for the Rail Safety Infrastructure Improvements Grant program to improve the safety of rail infrastructure. The FRA selected INDOT in September 2016 for a \$640,000 grant to be used to install upgraded active warning devices to improve safety at four rail-highway at-grade crossings located in Gibson, Jasper, Delaware, and Sullivan Counties.

### ECONOMIC DEVELOPMENT ADMINISTRATION GRANTS

The U.S. Economic Development Administration (EDA) offers grant and loan assistance programs to support local organizations in their economic development efforts.<sup>15</sup> The EDA targets distressed communities with the following two grant programs:

- The Public Works program seeks to help distressed communities revitalize, expand, and upgrade their physical infrastructure to attract new industry or diversify the economy. It can also be used to purchase land to support the establishment or expansion of industrial or commercial enterprises.
- The Economic Adjustment Assistance program provides a wide range of technical, planning, and infrastructure assistance to regions experiencing adverse economic changes resulting from a steep decline in manufacturing employment, changes in trade patterns, major natural disasters, military base closures, or environmental changes and regulations.

Both programs fund rail projects. In 2014, an EDA grant of \$1.6 million was used to upgrade a 25-mile rail line between Madison and North Vernon. By upgrading the line to 115-pound track, Madison's Meese Orbitron Dunne, a plastics design and manufacturing company, can expand its product line. Meese depends on the rail system to distribute its products and materials and has already invested

<sup>15</sup> For additional detail, see the Economic Adjustment Assistance website: <https://www.eda.gov/programs/eda-programs/>

\$6 million toward the expansion. According to the grantee, this expansion created 15 new jobs and saved an existing 110 jobs. The increased capacity of the railroad will also assist with future economic development for the region.

### **CONGESTION MITIGATION AND AIR QUALITY**

The Federal Highway Administration's (FHWA) Congestion Mitigation and Air Quality (CMAQ) program provides a flexible funding source to state and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide or particulate matter (nonattainment areas), and for former nonattainment areas that are now in compliance, called maintenance areas.

A number of Indiana counties are in nonattainment or maintenance status<sup>16</sup> for ozone and/or particulate matter, and are thus eligible to receive CMAQ funding for projects that reduce vehicular emissions.

The FAST Act authorized \$2.3–\$2.5 billion per year for this program from FY2016 through FY 2020. Funds may be used for both passenger and freight rail capital expenditures as long as the projects have an air quality benefit. Examples of CMAQ-funded freight rail projects include intermodal facilities, diesel engine retrofits, idle-reduction projects in rail yards, and rail track rehabilitation.

### **PILOT PROGRAM FOR TRANSIT-ORIENTED DEVELOPMENT PLANNING**

This program administered by the Federal Transit Administration (FTA) was established to support comprehensive planning projects that improve access to public transit. The program provided 21 grants with a combined value of \$19.5 million in federal fiscal year 2015 and \$14.7 million for 16 projects in fiscal year 2016. NICTD was awarded a \$300,000 grant in 2015 to conduct transit-oriented development (TOD) planning associated with the West Lake extension of the South Shore.

### **FEDERAL TRANSIT ADMINISTRATION FUNDING**

NICTD receives federal funding from the FTA through the Section 5307 (Urbanized Area) formula grants, and Section 5337 (State of Good Repair) and Section 5309 (Fixed Guideway Modernization) federal programs that are used for transit capital projects.

### **1.8.3 Federal Financing Programs**

In addition to grant funding, credit assistance can be helpful for freight rail improvement projects. Credit assistance can be in the form of loan guarantees, or can be direct loans with favorable terms, including low-interest rates, long payback periods, and/or payment schedules that begin after construction is completed. These financing alternatives can help to bridge the gap between project costs and project-related revenues.

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<sup>16</sup> Map: [http://www.in.gov/idem/airquality/files/nonattainment\\_areas\\_map.pdf](http://www.in.gov/idem/airquality/files/nonattainment_areas_map.pdf)

Table of counties and pollutants: [http://www.in.gov/idem/airquality/files/nonattainment\\_county\\_list.pdf](http://www.in.gov/idem/airquality/files/nonattainment_county_list.pdf)

## RAILROAD REHABILITATION AND IMPROVEMENT FINANCING

The FRA's Railroad Rehabilitation and Improvement Financing (RRIF) program provides direct loans and loan guarantees to finance development of railroad infrastructure. The program is funded up to \$35.0 billion, with \$7.0 billion reserved for projects benefiting non-Class I railroads. This program is currently undersubscribed, with only \$2.7 billion in outstanding loans, most to Class II and III railroads. Most sources indicate that an excessively long approval period (averaging 13 months<sup>17</sup>) is a reason for the program's underutilization.

RRIF was re-authorized and expanded under the FAST Act in December 2015 to allow financing of TOD elements of passenger rail projects, and to shorten review times and provide more transparency in the process. The FAST Act also included provisions to speed up environmental reviews, which may also help increase the program's utilization. While new program guidance is being developed, RRIF is proceeding under the existing guidance.

RRIF can be used for projects that:

- Acquire, improve, or rehabilitate intermodal or rail equipment or facilities, including track, components of track, bridges, yards buildings and shops
- Refinance outstanding debt incurred for the purposes listed above
- Develop or establish new intermodal or railroad facilities

Direct loans may be used to fund up to 100 percent of a railroad project with repayment periods of up to 35 years, and at favorable interest rates (possibly as low as the U.S. Treasury rate).

Eligible borrowers include railroads, state and local governments, government-sponsored authorities and corporations, joint ventures that include at least one railroad, and limited option freight shippers who intend to construct a new rail connection. The FRA will give priority to projects that provide public benefits, submitted by credit worthy applicants.

## TRANSPORTATION INFRASTRUCTURE FINANCE AND INNOVATION ACT

The federal Transportation Infrastructure Finance and Innovation Act (TIFIA) is a broad-based credit program, providing federal credit assistance to a wide range of surface transportation projects, including highway, transit, intercity passenger rail, some types of freight rail, intermodal freight transfer facilities, and port terminals. Eligible recipients include states, municipalities, public authorities, and private entities undertaking projects sponsored by public authorities.

TIFIA provides three types of financial assistance:

- Secured loans offering flexible repayment terms (e.g., loan payments delayed for a set number of months or years during the construction phase)

<sup>17</sup> Two examples: <https://www.narprail.org/news/blog/section-by-section-analysis-of-fast-act/>  
<http://usa.streetsblog.org/2011/02/18/in-age-of-s-C2%ADpending-cuts-why-are-billions-of-federal-rail-dollars-going-unused/>  
<http://cs.trains.com/trn/b/observation-tower/archive/2015/07/28/to-extend-or-not-to-extend-the-ptc-deadline-the-question-dividing-the-industry.aspx>

- Loan guarantees, which lend the full faith and credit of the U.S. government to loans provided by institutional investors such as pension funds
- Lines of Credit, which are contingent sources of funding in the form of federal loans that may be drawn upon to supplement project revenues, if needed, during the first 10 years of project operations

TIFIA cannot provide lines of credit or loans of more than 33 percent and 49 percent of a project, respectively. In addition, projects must be no more than 80 percent federally funded overall.

#### **1.8.4 Local Funding of Rail Projects**

Just as localities contribute to Amtrak and NICTD, county, MPO, and municipal funding is also available for freight rail improvements.

Local funding for freight rail is typically used for economic development purposes that benefit the broader community. Often local funds are used in conjunction with state and federal economic development grants. Typical examples include contributing to the capital costs for the following:

- Construction of a rail spur to a planned or existing industrial facility
- Rail improvements to maintain/improve rail service (such as track rehabilitation), which boost the national or global competitiveness of local agricultural or manufacturing products
- Construction of transload facilities

Donations of public land for these purposes are also common.

NICTD is investigating the following options to fund improvement in part using local funding:

- County Option – Economic Development Income Tax
- County Option – Income Tax
- Wheel Tax
- Local Option – Gas Tax
- Local Option – Sales Tax<sup>18</sup>

#### **1.8.5 Alternate Funding and Financing Options**

The challenge of paying for railroad projects has prompted planners and policymakers to look for new options to fund or finance rail projects that would otherwise not be completed. Some can cover most of the operating or capital costs of rail projects while others can incrementally bridge funding gaps if other sources fall short. Some of these approaches have been adopted in Indiana:

- *Passenger Rail Service Revenue Maximization* – These approaches can take the form of yield management, where ticket pricing is carefully adjusted to reflect differences in passenger demand. For example, a commuter rail agency may charge higher prices for peak-period tickets but encourage riders to use off peak services through lower pricing during off peak periods.

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<sup>18</sup> Northern Indiana Commuter Transportation District, Northwest Indiana Regional Development Authority, *20-Year Strategic Business Plan*” NICTD/NW Indiana Regional Development Authority, May 2014.

Another strategy is to offer premium services that provide higher fare revenue yields. Hoosier State service has effectively adopted this approach by offering business class service with higher fares. On-board concessions, in-station concessions, and parking can also increase revenues. One issue with passenger-revenue maximizing strategies is that they can lower public benefits. If improperly administered, charging higher ticket fares could reduce the ridership and hence public benefits of the service.

- *Mixing Commerce and Rail Passenger Transportation* – In some cases, passenger rail station development has been mixed with commercial development. As an example, private developers contributed \$40 million to renovating Union Station in Washington, DC, in the early 1980s. The renovated Union Station is both a shopping mall and a railroad terminal. All Aboard Florida expects to initiate the Brightline service between Miami and West Palm Beach in 2017, a service made financially possible in part by associated real estate development. Examples also exist of agencies selling naming or branding rights for rail stations. The New York Metropolitan Transportation Authority renamed Atlantic Avenue station in Brooklyn the “Atlantic Barclays Center” for which it receives \$200,000 per year.
- *Track Access or Right-of-Way Leasing and Fees* – Under these arrangements, the public owners of a railroad right-of-way charge other users access fees to use the railroad right-of-way. This can take the form of a lease agreement or trackage rights fees charged to other railroads. As an example, NICTD has an arrangement with the freight railroad, the Chicago South Shore and South Bend Railroad, for access to the South Shore Line. Public agencies can also charge public utilities to route utilities along railroad rights-of-way.
- *Local Taxes and Fees* – The logic of these funding mechanisms is to recoup some of the cost of rail services from those who often derive the highest economic benefits, namely those within the area surrounding a passenger or freight terminal. Under Tax Increment Financing (TIF) a TIF authority is created to fund infrastructure projects through incremental taxes associated with increases in property values. Special Assessment Districts have been used to help pay for transit services by charging individuals within a given district a fee or a tax. These districts require voter approval and often work best when implemented in conjunction with development projects to provide greater densities of potential riders in return for improved transit access or service. In other cases, property developers pay an impact fee to local governments to provide public services needed for the additional development, including passenger rail connections. Examples also exist of municipalities paying for freight rail improvements such as short-line rehabilitation projects, or multimodal freight facilities.
- *State Taxes and Fees* – While some states pay for rail improvements out of the state’s general fund, others have assigned dedicated funding streams. The funding streams can be statewide or the taxes and fees can be specific to the areas that benefit from the relevant rail services. New York and Oregon administer payroll taxes for transit services within districts that benefit from those services. Virginia increased its sales tax in 2013 to pay for the Intercity Passenger Rail Operating and Capital Fund, with larger sales tax increases in Northern Virginia and Hampton Roads districts, areas that particularly benefit from these services. Virginia pays for its Rail Enhancement Fund, which funds passenger and freight capital projects, through a portion of its tax on rental cars. European countries and some U.S. states have established or have considered other funding streams to pay for rail projects such as road tolling/congestion pricing, truck charges, gas taxes, motor-vehicle registration fees, mileage-based user fees, and carbon taxes.



- *Public-Private Partnerships (PPP) and Alternate Delivery* – For freight projects, PPPs are usually associated with the public sector helping to fund or finance projects that would traditionally have been privately funded or financed. Within a passenger rail context, PPPs are associated with private companies helping to provide a public service (i.e., passenger rail service.) PPPs can serve to combine public and private resources to accomplish a project that yields public benefits and might not have been accomplished with public or private resources alone. PPPs can be used to adjust project risks to public and private entities, and/or adjust the timing of project payments.

INDOT entered into an innovative PPP. While plenty of commuter rail systems across the country rely on private companies to operate their systems, INDOT was unusual in hiring a third party—Iowa Pacific Holdings—to operate the Hoosier State service. This arrangement helped to reduce the costs of providing the service, while at the same time introducing a partner with strong incentives to build and improve the service. Iowa Pacific Holdings served in this role from July 2015 through February 2017.

### **1.8.6 Uncertainty in Rail Funding and Financing**

Some of the Indiana state rail funding sources described previously are tied to revenue sources. For example, the IRSF receives money through 0.031 percent of the state sales tax. In these cases, short of a legislative change, one can be reasonably confident that funding will be available year to year. Other state programs receive money from the state's general fund, such as the funding for Hoosier State service. In this case, funding is contingent upon the legislature appropriating funds during the biennial budgeting process, which creates some uncertainty as to funding availability and funding levels. INDOT's flexibility in directing monies toward rail projects outside of established rail programs is extremely limited.

The greatest funding uncertainty is with federal sources. While the Section 130 Railway-Highway Crossing Program is a formula grant program, nearly all other federal programs that can be used to fund rail projects are competitive. The ability to program federally funded projects over specific time periods is contingent on assumed success in winning grants. Even when funding levels are established by multi-year authorizing legislation, the level at which Congress will appropriate funds to these programs is not known until completion of the annual budgeting process.

## 2 The State's Existing Rail System

### 2.1 DESCRIPTION AND INVENTORY

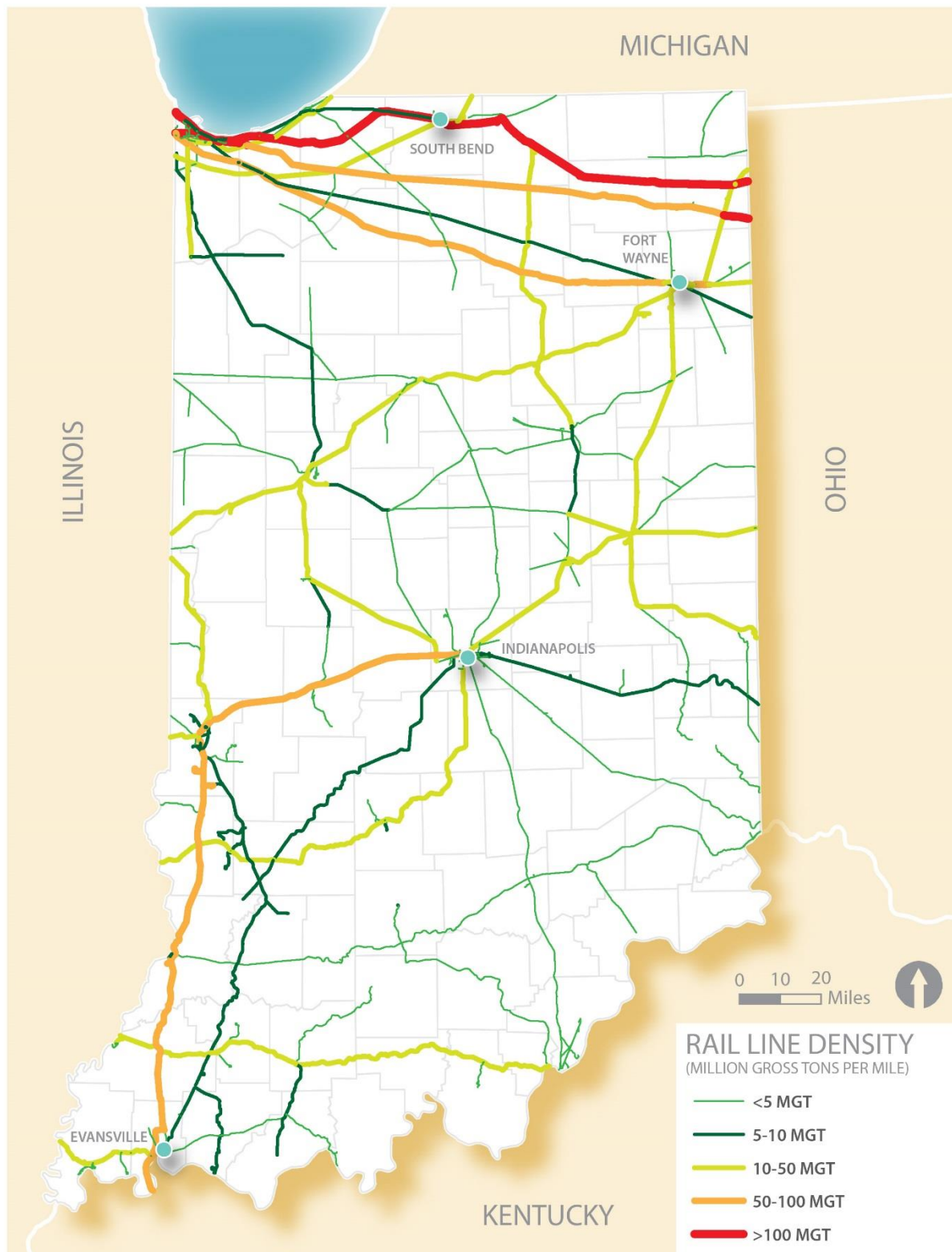
The Indiana rail network consists of 4,134 route miles with 6,618 public crossings, which include 5,693 rail-highway at-grade crossings and 925 grade-separated structures. Most of the network is owned by freight railroads, which own all but the 90-mile South Shore Line owned by NICTD, 17 miles between Porter and the Michigan border owned by Amtrak, and 66 miles owned by tourist/excursion railroads at several locations in the state. In terms of mileage and number of trains, Indiana's rail network is used primarily for freight movement. Some rail corridors are used for both passenger and freight operations.

#### 2.1.1 *Capacity and Usage of Rail Lines in Indiana*

Rail lines within Indiana vary in terms of their capacity, and the number and size of trains per day that these rail lines can accommodate. From the perspective of rail lines' owners and operators, there is little logic to building and maintaining rail lines at a capacity that is higher than necessary for the trains these lines carry. Too little capacity causes operational problems with trains being delayed, and freight and passengers not arriving on time. Delays increase operating costs in terms of equipment usage, train crew time, fuel, and other factors. Generally, railroads try to adjust the capacity of rail lines to be appropriate to the level of rail traffic on those lines. Figure 2.1 displays the density of rail lines in Indiana in terms of annual gross tons per mile. Gross tons include the weight of freight shipped plus the weight of rail equipment (locomotives and railcars). High-density rail lines are often referred to as "mainlines" while low-density rail lines are often referred to as "branch lines." A frequently used threshold for defining rail lines as "high density" or "mainline" is 20 million gross tons of freight passing over the line per year.

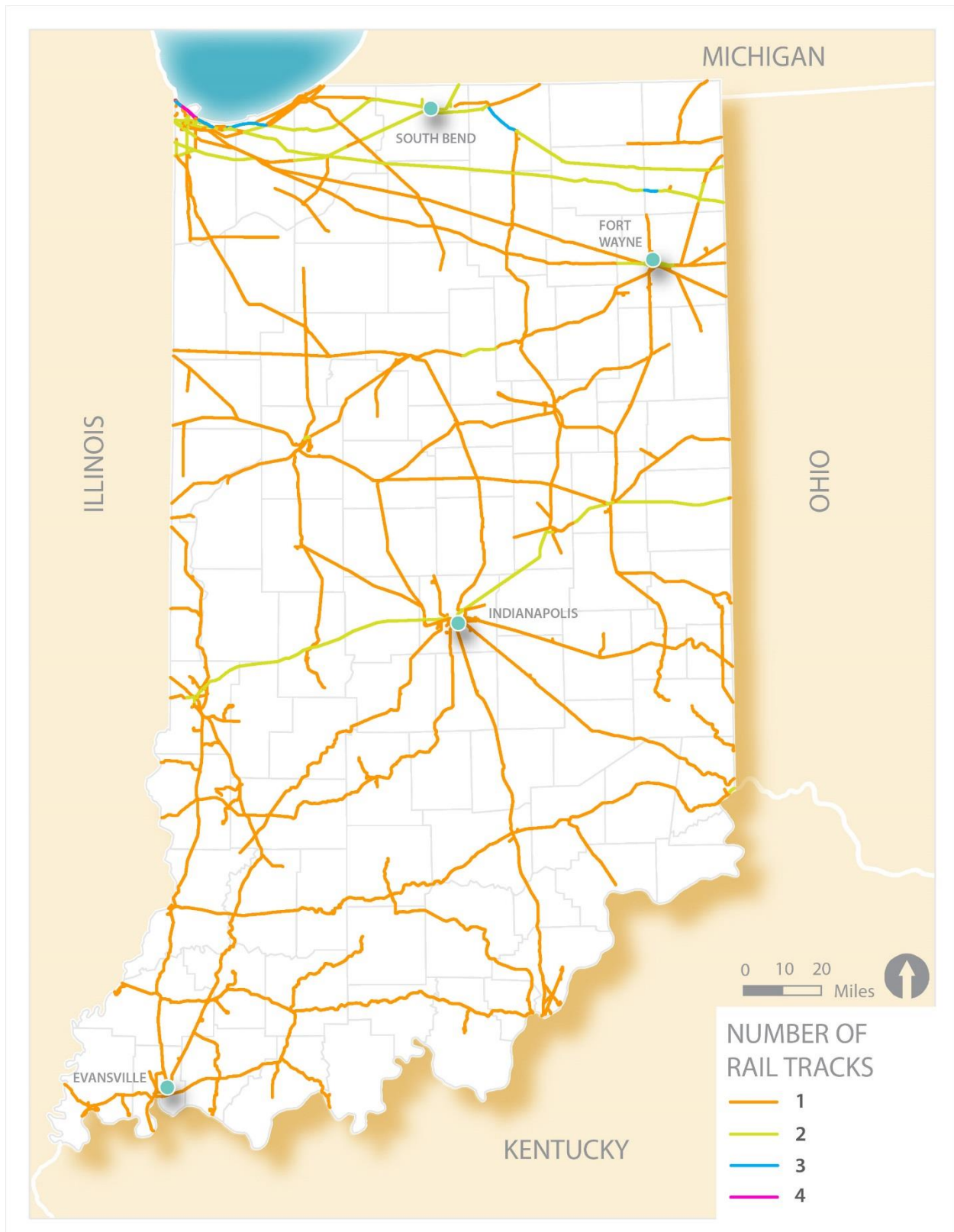
The capacity of rail lines depends on several factors, including the topography, the mix of train traffic, the capacity of rail yards, the number and size of passing sidings, and the operating speeds of tracks. One important determinant of rail line capacity is the number of tracks. As shown in Figure 2.2, most rail lines within Indiana are single track. Figure 2.1 shows a few high-density rail lines where trains operate on two or more parallel tracks.

Figure 2.1. Density of Indiana Rail Network (2012)



Source: INDOT, FRA, WSP |Parsons Brinckerhoff, information obtained from rail carriers

Figure 2.2. Number of Tracks on Rail Lines in Indiana

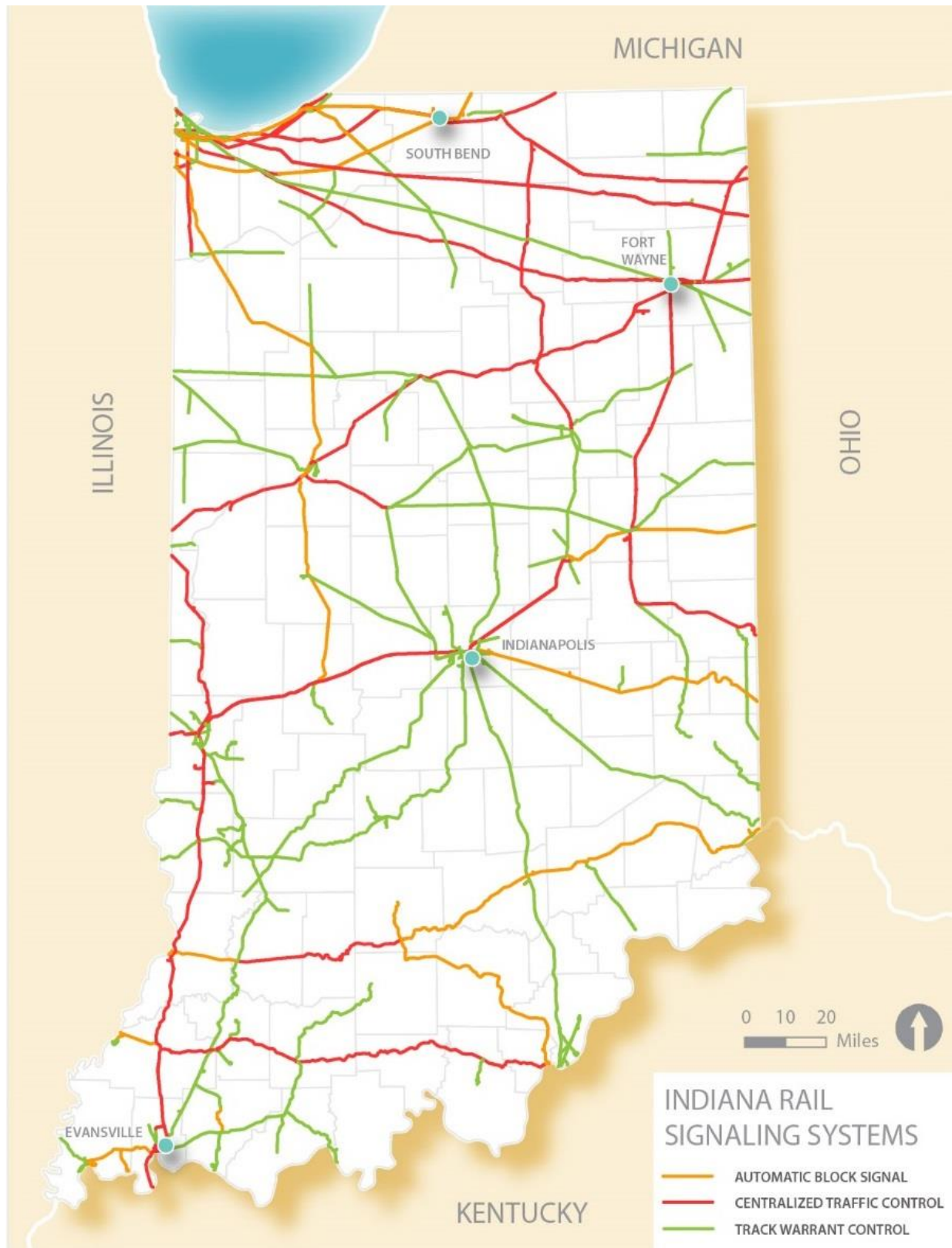


Source: INDOT, U.S. Department of Transportation, WSP | Parsons Brinckerhoff

Another determinant of the rail line capacity is how trains are dispatched. Under Track Warrant Control (TWC) train crews must obtain verbal authorization from a dispatcher to occupy a given section of track. Areas dispatched by TWC are referred to as “dark territory” since there are no automatic signals. TWC is appropriate for low-density rail lines, but the process of obtaining verbal authorization limits the capacity of rail lines. Automatic Block Signaling (ABS) enables rail lines to have a higher capacity. ABS consists of a series of automatic signals by which trains can gain automatic authority to access segments of track. Electronic signals determine whether segments of track are occupied or otherwise obstructed and convey this information to approaching trains. The highest capacity system in common use in the U.S. for dispatching trains is the Centralized Traffic Control (CTC) system, by which remotely located dispatchers can control train movements through remotely controlled switches. In some cases, dispatchers also control signals but in other cases signals are automatic and only the switches are controlled by dispatchers. As with the number of tracks, the usage of dispatch systems tends to depend on the level of freight on rail lines in Indiana, so that lower density lines tend to be dispatched with TWC, the highest density lines with CTC, and ABS frequently used for those in between. Figure 2.3 displays signal systems of rail lines in Indiana.



Figure 2.3. Signaling System of Rail Lines in Indiana

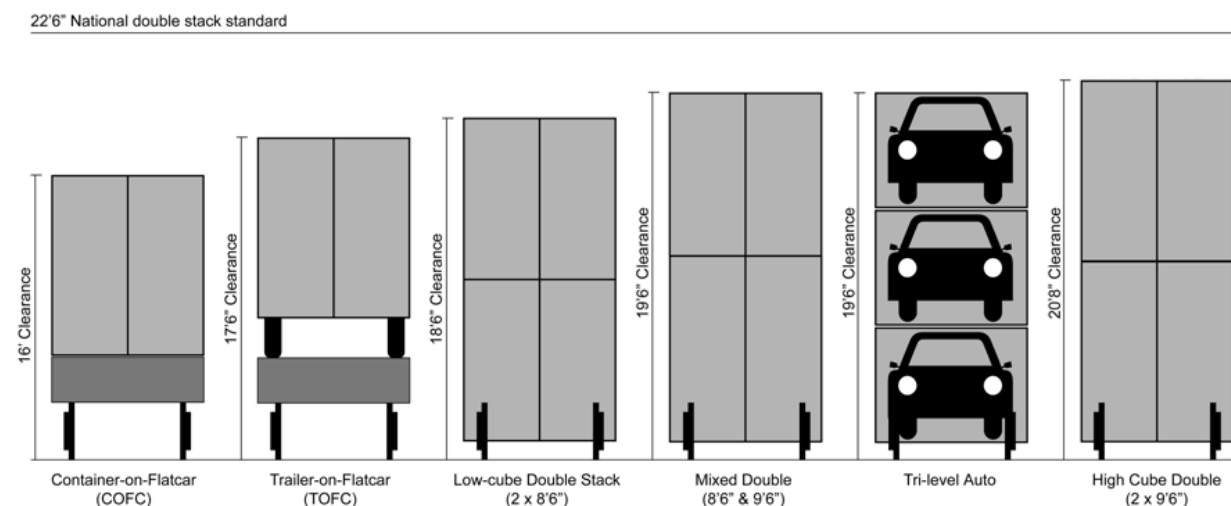


Source: INDOT, U.S. Department of Transportation, WSP | Parsons Brinckerhoff

## 2.1.2 Height and Weight Capacity of Rail Lines in Indiana

When most rail lines in the U.S. were built, railcars were generally no higher than 15 feet 6 inches above rails. But since then, the range of railroad equipment found on the U.S. rail network has increased dramatically. Some “high cube” boxcars are 17 feet above rail. Multilevel flatcars used for carrying automobiles are as high as 19 feet above rail. Railcars carrying double-stack high cube intermodal containers can be as much as 20 feet 2 inches above rail. If one assumes a 6-inch buffer over railcars, 20 feet 8 inches are required to accommodate unrestricted double-stack operations. Figure 2.4 displays maximum clearances assuming a 6-inch buffer. The Association of American Railroads (AAR) has adopted 22 feet 6 inches as the standard for unrestricted rail operations.

Figure 2.4. Clearance Requirements by Type of Rail Equipment



Source: Vermont 2015 State Rail Plan

The vertical clearance of rail lines is only an issue if the types of equipment that use those rail lines are limited by the lines' vertical clearance. Ideally, any rail line in Indiana would be able to accommodate any rail equipment. Most intermodal routes in Indiana can accommodate double-stack intermodal equipment. The one exception is the Louisville & Indiana Railroad (L&I) line between Indianapolis and Seymour, which does not currently have the clearance to accommodate unrestricted double-stack operations, but should be able to do so after a series of upgrades associated with an agreement between the L&I and CSX.

In the early 1990s, the railroad industry began to shift from a maximum weight standard of 263,000 pound gross weight for railcars to 286,000 pounds. It is now standard on large railroads (Class I railroads with revenues more than \$457.91 million). For large railroads and their customers, the shift offered cost savings. As the 286,000-pound railcar standard was adopted, the AAR tested the impact of these railcars and estimated that operating savings—excluding maintenance-of-way—would be about 8.8 percent.<sup>19</sup> Adopting 286,000-pound railcars can increase the cost of maintaining rail lines and bridges. The AAR's research found that the net impacts of shifting to 286,000-pound railcars—accounting for increased maintenance-of-way expenditures—is about 6 percent. Not only are

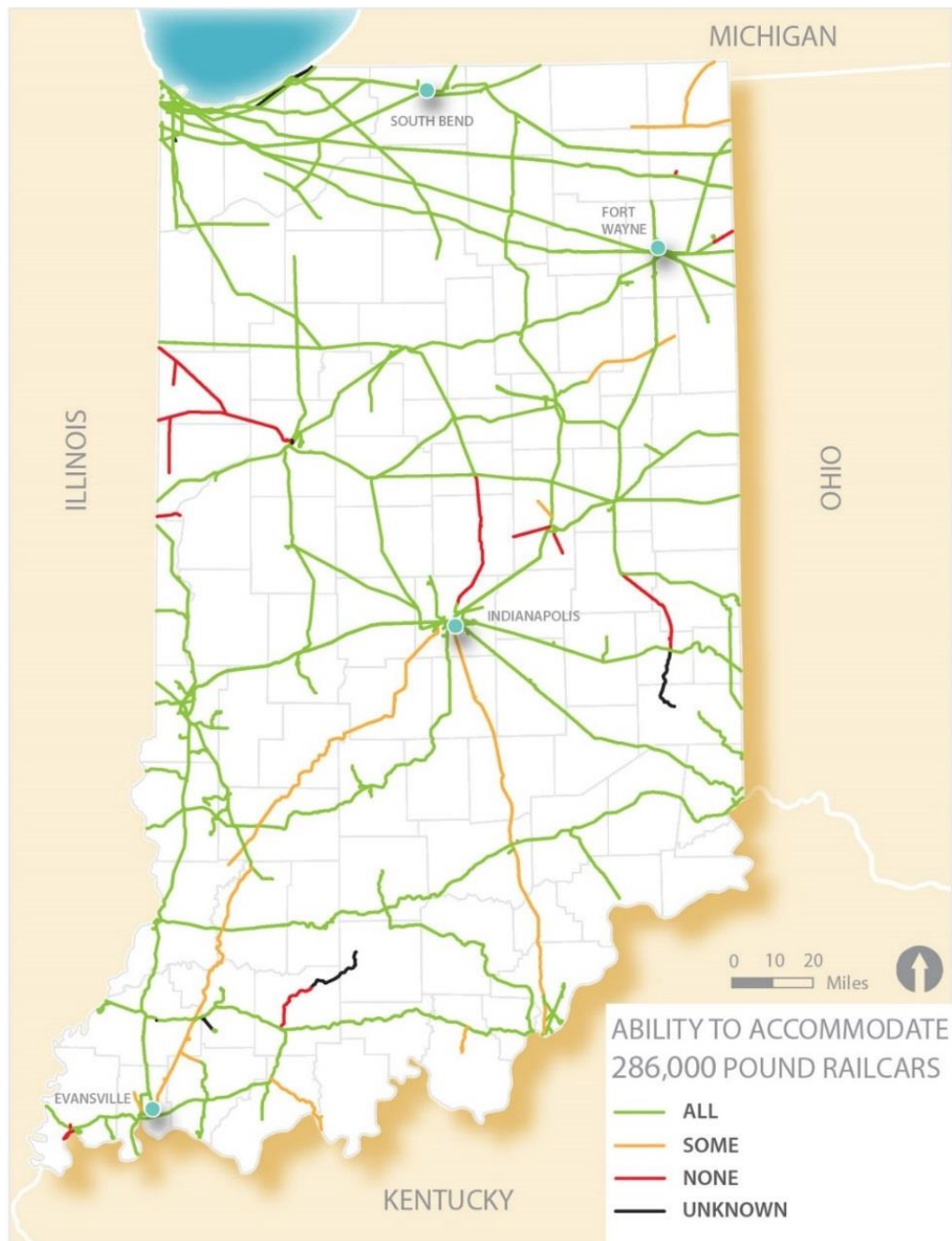
<sup>19</sup> M.B. Hargrove, Thomas S. Guins, and Carl D. Martland, *Economics of Increased Axle Loads: FAST/HAL Phase II Results*, Report No. LA-007, Association of American Railroads, October 1996.



the 286,000-pound cars larger, but they can also fit more freight compared to the railcar's weight, so that the increased capacity for many types of car is 10 to 11 percent.

Upgrading rail lines to accommodate these heavier railcars can be expensive and require not only upgrading of tracks, but also bridges. Within Indiana, at least 345 miles of rail lines are unable to accommodate these industry-standard 286,000-pound railcars. Figure 2.5 displays those rail lines in Indiana that could accommodate 286,000-pound cars and those that could not as of 2016

*Figure 2.5. Ability of Indiana Rail Lines to Accommodate 286,000 Pound Railcars, 2016*



Source: INDOT, WSP | Parsons Brinckerhoff, Survey of Class II and Class III Railroads

### 2.1.3 Railroad Companies in Indiana

According to the AAR, Indiana ranks third in the nation for the highest number of railroads operating in the state. Forty-four railroads operate within the state or access the Indiana rail network through operating rights (trackage rights). Most of the individual railroads are Class III railroads. The U.S. Surface Transportation Board (STB) has assigned three categories to freight railroads:

- Class I – Class I railroads are defined by the federal STB as having more than \$250 million in annual carrier operating revenue for three consecutive years in 1991 dollars. With inflation, the threshold for a Class I railroad is \$457.9 million in 2015 revenue.
- Class II – Also known as regional railroads, Class II carriers have annual revenues below the Class I threshold of \$250 million in 1991 dollars but above the Class III maximum threshold of \$20 million. With inflation, this translates to between \$457.9 and \$36.6 million in 2015 revenue.
- Class III – Also known as short-line railroads, Class III carriers have revenues less than \$36.6 million in 2015 revenue.

The different types of railroads play separate roles within the rail network. Most Class II and Class III railroads gather railcars and provide last-mile connections to rail customers. Class I railroads also operate rail lines that provide direct connectivity to customers, but additionally focus on long-haul freight movements between different parts of the country. Figure 2.6 provides a map of the Indiana rail network.

In addition to the STB categories, it is relevant to note an additional category of railroad recognized by INDOT, namely Railroad Port Authorities. These are railroads owned by local government entities, and within Indiana, they include the City of Auburn Port Authority, the City of Madison Port Authority Railroad, and the Perry County Port Authority (Hoosier Southern Railroad). Each of these also operates as a Class III railroad per STB definition.

#### CLASS I RAILROADS

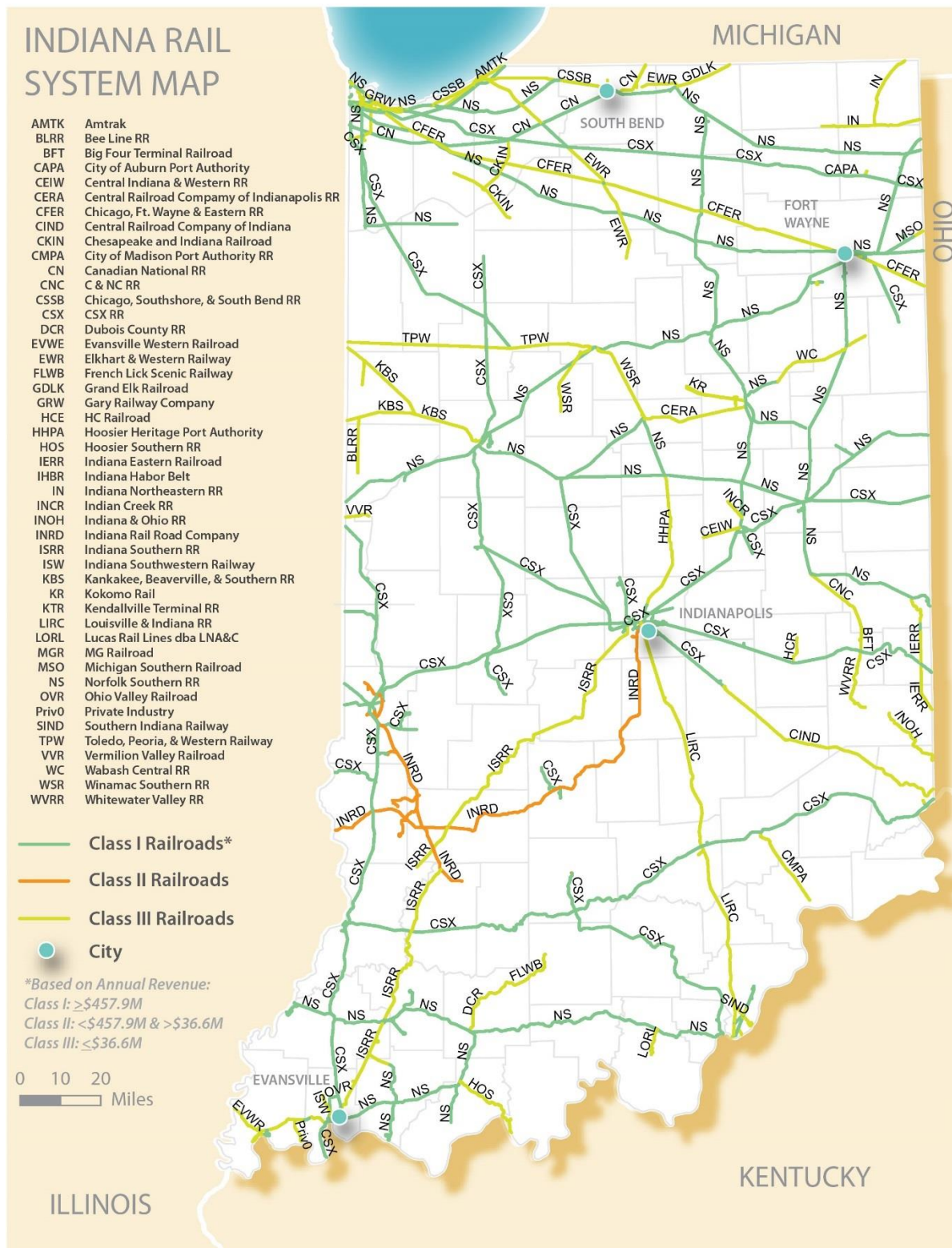
Class I rail carriers operate 60 percent of the Indiana rail network by route miles. Class I rail service to Indiana is provided mainly by Norfolk Southern (NS) and CSX, the two primary Class I rail carriers in the eastern U.S. Both carriers maintain extensive networks within Indiana. A single rail line owned by the Canadian National Railway (CN) runs through the northwest corner of the state. In addition, the Canadian Pacific Railway has operating rights to over 154 miles of several rail lines in northern Indiana. The Union Pacific Railroad (UP) has 19 miles of trackage rights on rail lines outside of Chicago within Indiana. See Table 2.1.

*Table 2.1. Class I Railroad Mileage in Indiana*

Class I Railroads	Miles Leased	Miles Owned	Miles Owned, Not Operated	Miles Operated	Trackage Rights
Canadian National Railway	0	102	0	102	1
Canadian Pacific	0	0	0	0	154
CSX Transportation	15	1,164	225	1,179	445
Norfolk Southern Corporation	2	1,174	36	1,176	265
Union Pacific Railroad	0	0	0	0	19
<b>Total</b>	<b>17</b>	<b>2,440</b>	<b>261</b>	<b>2,457</b>	<b>884</b>

Source: R-1 Annual Reports filed with the STB

Figure 2.6. Indiana Rail Network



Source: INDOT, U.S. Department of Transportation, WSP | Parsons Brinckerhoff

## CSX TRANSPORTATION

CSX operates over a 21,000-mile network of track in 23 states, Washington, DC, and the Canadian provinces of Ontario and Quebec, including 1,179 miles in Indiana. CSX serves major markets in the eastern part of the U.S. While CSX traffic flows vary by commodity, the largest flows on the carrier's system roughly describe a triangle, with Chicago anchoring the northwest corner, major northeastern markets such as New York representing the northeast corner, and markets such as Florida and Atlanta comprising the southeastern corner of the triangle. Two legs of this triangle pass through Indiana and are among the most heavily trafficked CSX lines in the state, including the Barr and Garrett Subdivisions, which provide east-west connectivity across the northern part of the state, and the CE&D Subdivision, which runs north-south along the Illinois border in the western part of the state (Figure 2.7). Major classification yards in Indiana are located in Indianapolis and Evansville. (Appendix A, Table A.1 describe CSX rail lines in Indiana.)

Figure 2.7. CSX Subdivisions



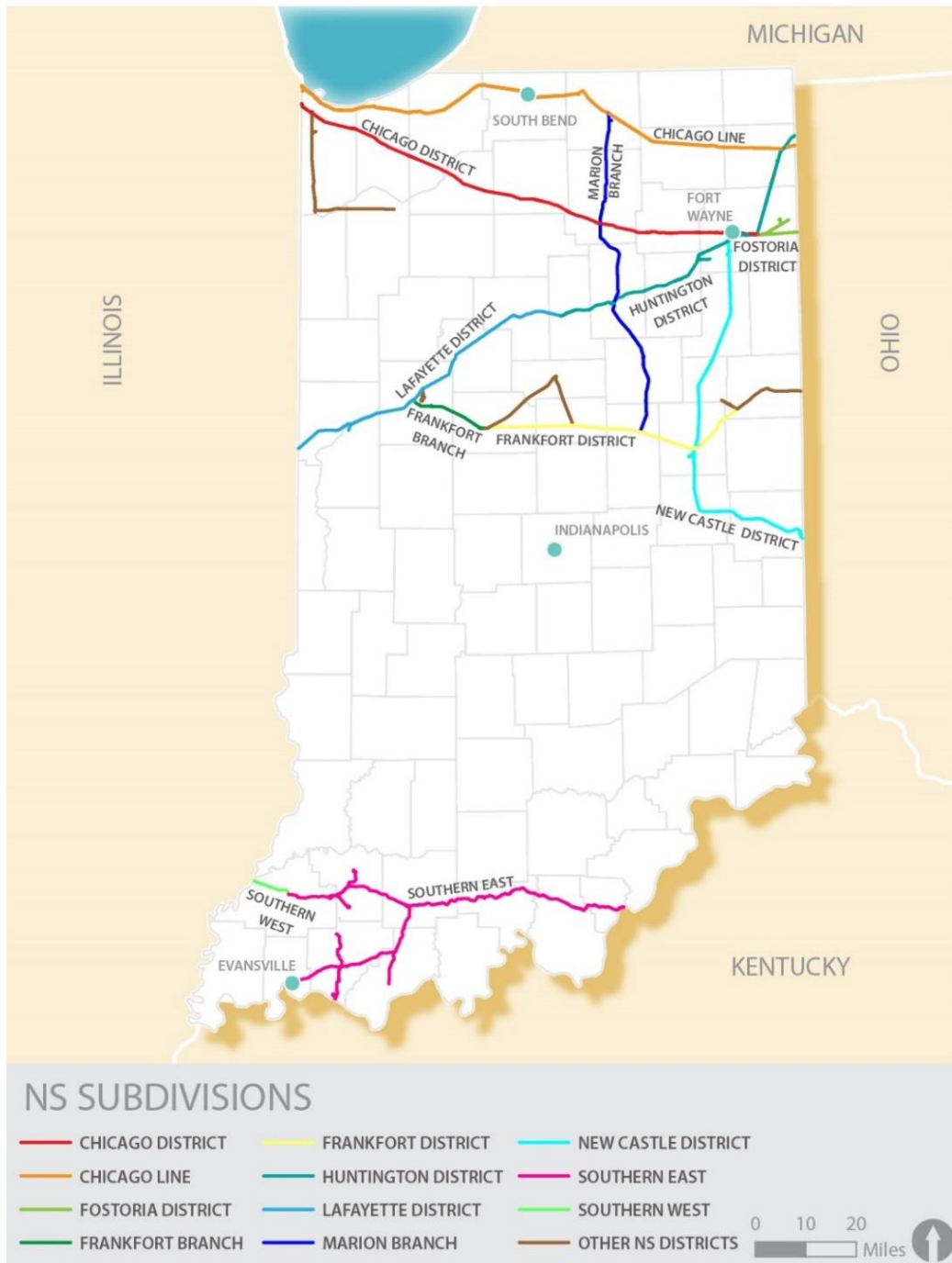
Source: WSP | Parsons Brinckerhoff



### NORFOLK SOUTHERN

Similar to CSX, the NS network serves many of the major rail markets in the eastern U.S. NS operates over 20,000 route miles in 22 states and Washington, DC, of which 1,176 are in Indiana. The busiest rail flows on the NS system in Indiana are on the Chicago Line that crosses through northern Indiana. This line is part of the NS corridor that connects Chicago with northeastern markets such as Pennsylvania and New York (Figure 2.8). Appendix A, Table A.2 describes NS rail lines in Indiana.

Figure 2.8. Norfolk Southern Districts



Source: WSP | Parsons Brinckerhoff

## CLASS II AND CLASS III RAILROADS

Thirty-eight Class III railroads operate in Indiana, as well as one Class II railroad—the Indiana Rail Road. Collectively, these railroads operate 1,504 route miles or 37 percent of the Indiana rail network. Of the 1,504 miles, 1,167 miles are owned by the railroads that operate over those lines, while 337 miles are leased. In some cases, the operating companies are the railroad owners. In other cases, railroads are owned by short-line holding companies—companies that own a portfolio of different Class II and Class III railroads. As examples, Genesee & Wyoming, Inc. owns five railroads in Indiana: the Toledo, Peoria & Western Railroad Corp.; the Chicago, Fort Wayne & Eastern Railroad; the Central Railroad of Indiana; Central Railroad Company of Indianapolis; and the Indiana Southern Railroad Company, LLC. Pioneer Rail Corp. owns four railroads in Indiana: the Elkhart & Western Railroad; the Indiana Southwestern Railway; the Kendallville Terminal Railway; and the Michigan Southern/Napoleon, Defiance & Western Railway. Other railroads are owned by shippers, such as the Bee Line (owned by Stewart Grain) and Lucas Rail Lines (owned by Lucas Oil). Other rail lines are owned by local governments, including the Madison Railroad (owned by the City of Madison), the Port Authority of Auburn (owned by the City of Auburn), and the Hoosier Southern (owned by Perry County).

In addition to the STB designation, Class III railroads can be further subdivided into local or switching and terminal railroads. Local railroads provide service to customers along their lines, moving carloads to and from interchanges with Class I railroads. (Appendix A, Table A.4 provides a description of local railroads in Indiana.) Switching and terminal railroads are associated with specific terminal or rail yard areas. Their focus is on “switching” or sorting cars to and from industry and storage tracks and making and breaking up trains. (Appendix A, Table A.5 provides summaries of Indiana switching and terminal railroads.)

Short-line and regional railroads within Indiana vary widely by the amount of traffic they carry and the size of their rail networks. Many, if not most, operate over rail lines that had previously belonged to larger railroads but were spun off because they were considered unprofitable or non-essential by their previous owners, or the previous owners ran into financial difficulty. Because they had not been high investment priorities, in many cases, these rail lines were in a poor state of repair when obtained by their current owners with an accumulation of deferred maintenance needs.

The FRA has established track classifications that dictate the maximum speeds over which trains can operate over rail lines, the required frequency of track inspections, and the level of robustness by which tracks are built and maintained. The FRA track classification can be used as an indicator of a rail line’s state of repair as follows:

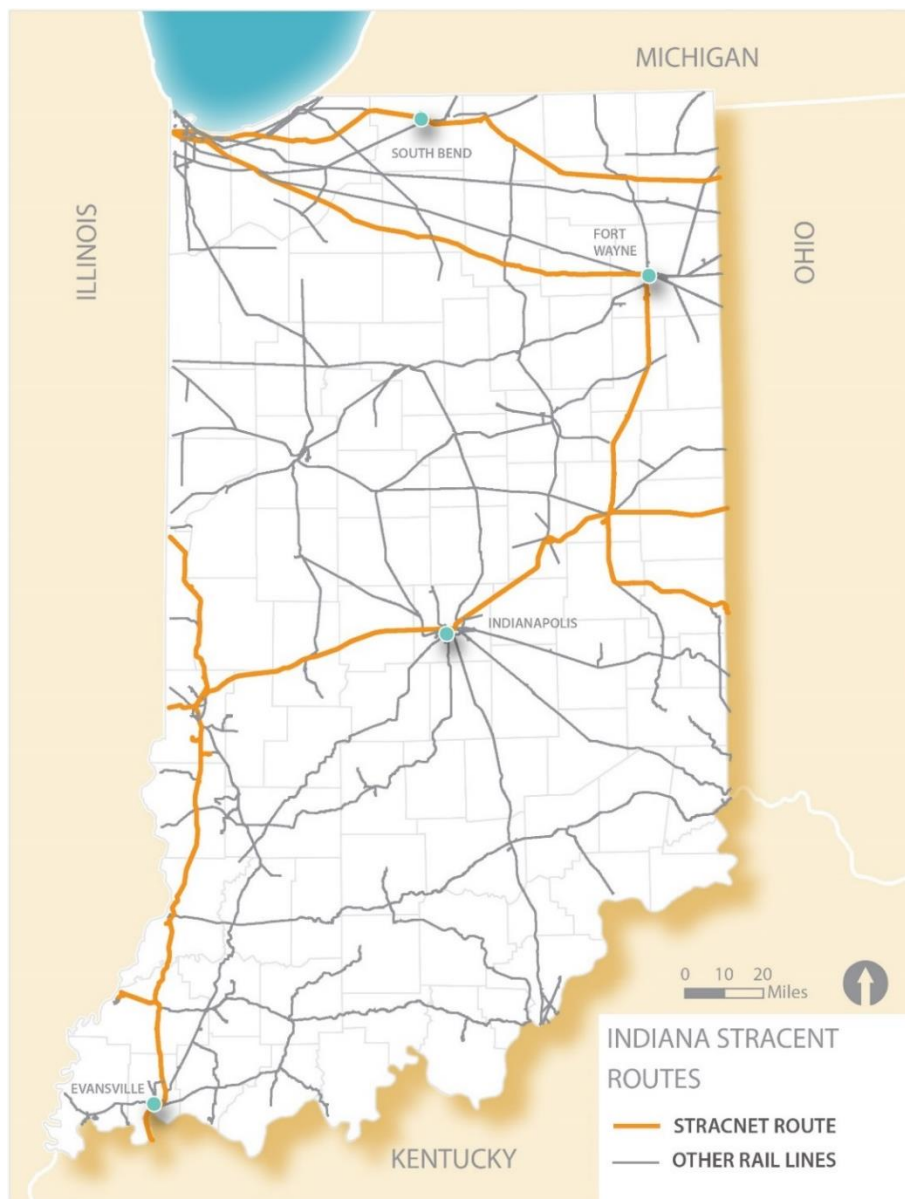
- **Excepted** – This designation indicates that a track segment is in a poor state of repair. Freight trains are limited to a maximum of 10 miles per hour, passenger operations are not permitted on the line, and no train can operate with more than five cars of hazardous materials.
- **Class 1.** – Class 1 track meets certain minimum standards but still limits train speeds to no more than 10 miles per hour.
- **Class 2 and above** – The FRA has established six track class categories in addition to Excepted, with Class 6 enabling 110 mile per hour operations and Class 2 enabling freight trains to operate at 25 miles per hour (passenger trains at 30 miles per hour). For the purposes of assessing short-line and regional railroads, FRA Class 2 track or above indicates that the rail line is maintained in a relatively good state of repair.

Appendix A, Table A.3 and A.4 provides the FRA track classifications.

### 2.1.4 Strategic Rail Corridor Network

The U.S. military seeks to ensure that the national transportation network is prepared to support defense deployment. Rail transportation is important to deploying heavy and tracked vehicles to seaports of embarkation. In conjunction with the FRA, the U.S. Department of Defense (DoD) has established the Strategic Rail Corridor Network (STRACNET) to ensure that minimum rail needs are met and coordinated for defense deployment. A portion of the STRACNET passes through Indiana (Figure 2.9). The DoD works to ensure that the appropriate clearance capability is available for oversized DoD cargo on STRACNET lines.

Figure 2.9. Strategic Rail Corridor Network (STRACNET)



Source: U.S. Bureau of Transportation Statistics data



### 2.1.5 Inactive and Abandoned Rail Lines in Indiana

When rail lines are no longer used for rail service, they can have different statuses.

- **Discontinued Service/Inactive** — Although no trains operate over them, inactive rail lines are still owned by railroads. The railroad maintains a common carrier obligation so that it could be required to serve shipper(s) upon reasonable request.
- **Abandoned** — Before a railroad can sell or transfer property ownership of a rail corridor and its underlying property to a non-rail operating entity, the corridor must be “abandoned”. This is a process whereby the STB releases the railroad from its common carrier obligation. Once the corridor is abandoned, the railroad can sell the land if the corridor had originally been acquired by purchase. However, if the railroad was granted a “right” to use the land for railroad purposes through easement, the ownership of the right-of-way reverts to the current owner of the parcel of land that contained the easement when it was granted.
- **Rail Banked** — In 1983, Congress passed the National Trails Act, which allowed for the banking of rail corridors, including easements, through the interim use of railroad corridors as recreational trails. In these cases, a trail group intervenes in the abandonment process and negotiates with the railroad to transfer ownership, including easements, to the trail group. Interim trail use presumes that at some point the railroad right-of-way will be needed once again for rail purposes.
- **Public Use** – The National Trails Act also allows agencies to request that the rail corridor be made available for public use if it has determined that the right-of-way is suitable for highway or mass transit usage, conservation, energy production or transmission, or recreation.

Several rail lines within Indiana fall within the inactive category:

- 15 miles of the Indiana and Ohio Railway
- 10 miles of the Central Railroad of Indiana
- 2 miles of the Central Railroad of Indianapolis
- 0.4 miles of the Chicago, Ft. Wayne & Eastern Railroad
- 2 miles of the Hoosier Heritage Port Authority
- 1 mile of the Hoosier Southern Railroad
- 2 miles of the Madison Railroad
- 22 miles of the NS Kokomo Spur
- 15 miles of the NS Sharpsville Lead
- 68 miles of the CSX from Bedford to New Albany

In addition, NS has indicated that its line between Evansville and Boonville will likely soon be out of service.

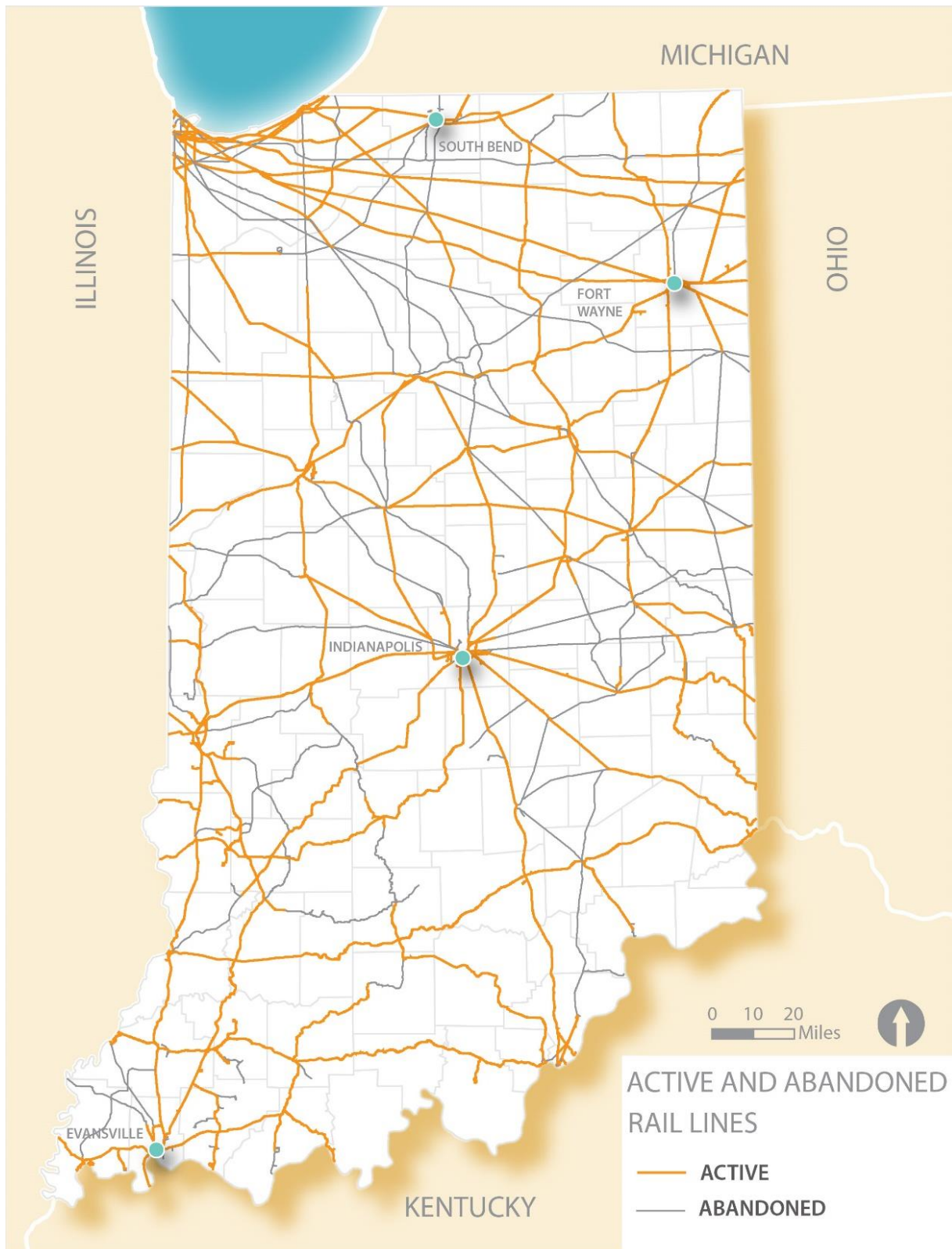
Indiana’s rail network today is much smaller than it had once been. Figure 2.10 displays active and abandoned rail lines within Indiana.

Since 1950, nearly 3,500 miles of rail line in Indiana have been abandoned and are no longer in rail service.<sup>20</sup> Of these, about 121 miles have been rail banked. Figure 2.11 shows the rail banked lines of which Indiana Department of Natural Resource staff are aware.

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<sup>20</sup> Parsons Brinckerhoff Quade & Douglas, Inc. for the INDOT, *Indiana Rail Corridor Preservation Study*, February 2003, INDOT abandonment database.

Figure 2.10. Active and Abandoned Rail Lines in Indiana



Source: RailsandTrails.com, Columbus Public Library

Figure 2.11. Active and Rail Banked Lines in Indiana

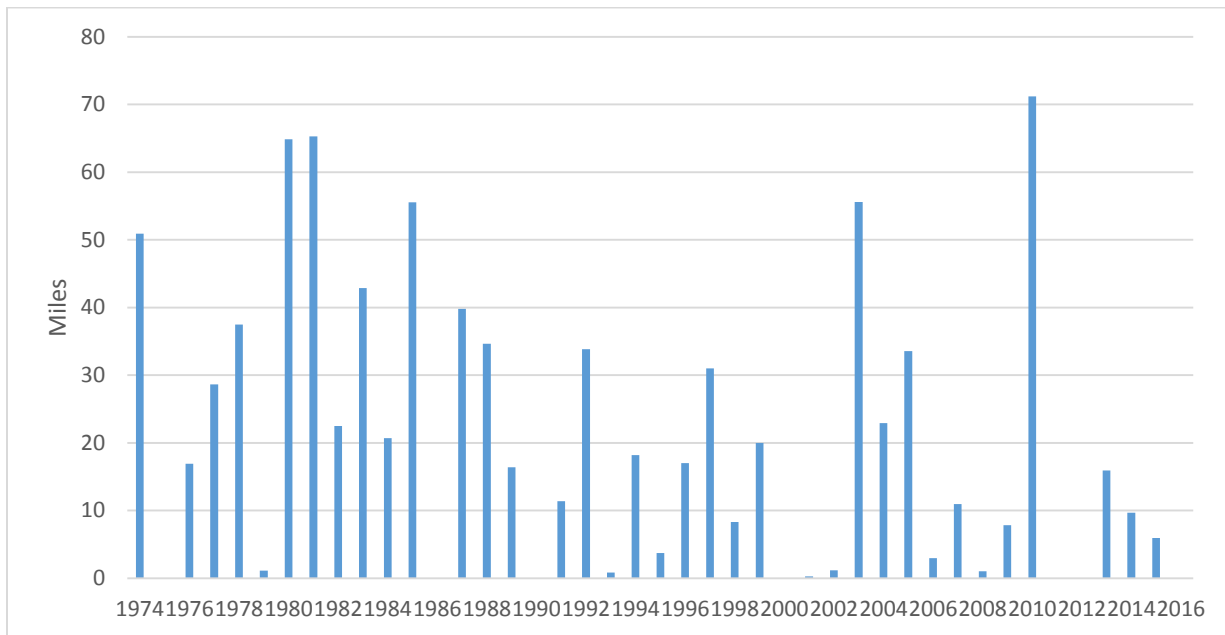


Source: INDOT, Indiana Department of Natural Resources

Within Indiana about 280 miles of additional recreational trails have been built on former rail lines.<sup>21</sup> Most recreational rail trails within Indiana were established without an “interim use” or “rail banking” designation by the STB.

As shown in Figure 2.12, recent average annual losses to the rail network might not be as high as was the case in the 1980s, but losses still occur.

Figure 2.12. Abandoned Rail Mileage by Year



Source: INDOT abandonment database

## 2.2 FREIGHT MULTIMODAL CONNECTIONS

Indiana is fortunate to have multimodal connectivity to national and global markets via the Class I rail system, supported by a network of strong short-line rail providers, as well as the inland waterways via the Ohio River and the Great Lakes. This multimodal freight network allows a shipper to take advantage of the benefits of a particular transportation mode in a seamless transaction from door to door.

This inventory identifies those facilities that are available in Indiana to move products to and from the rail system and other modes. This includes truck-to-rail and rail-to-water connectivity. The inventory of intermodal facilities is organized into the following categories:

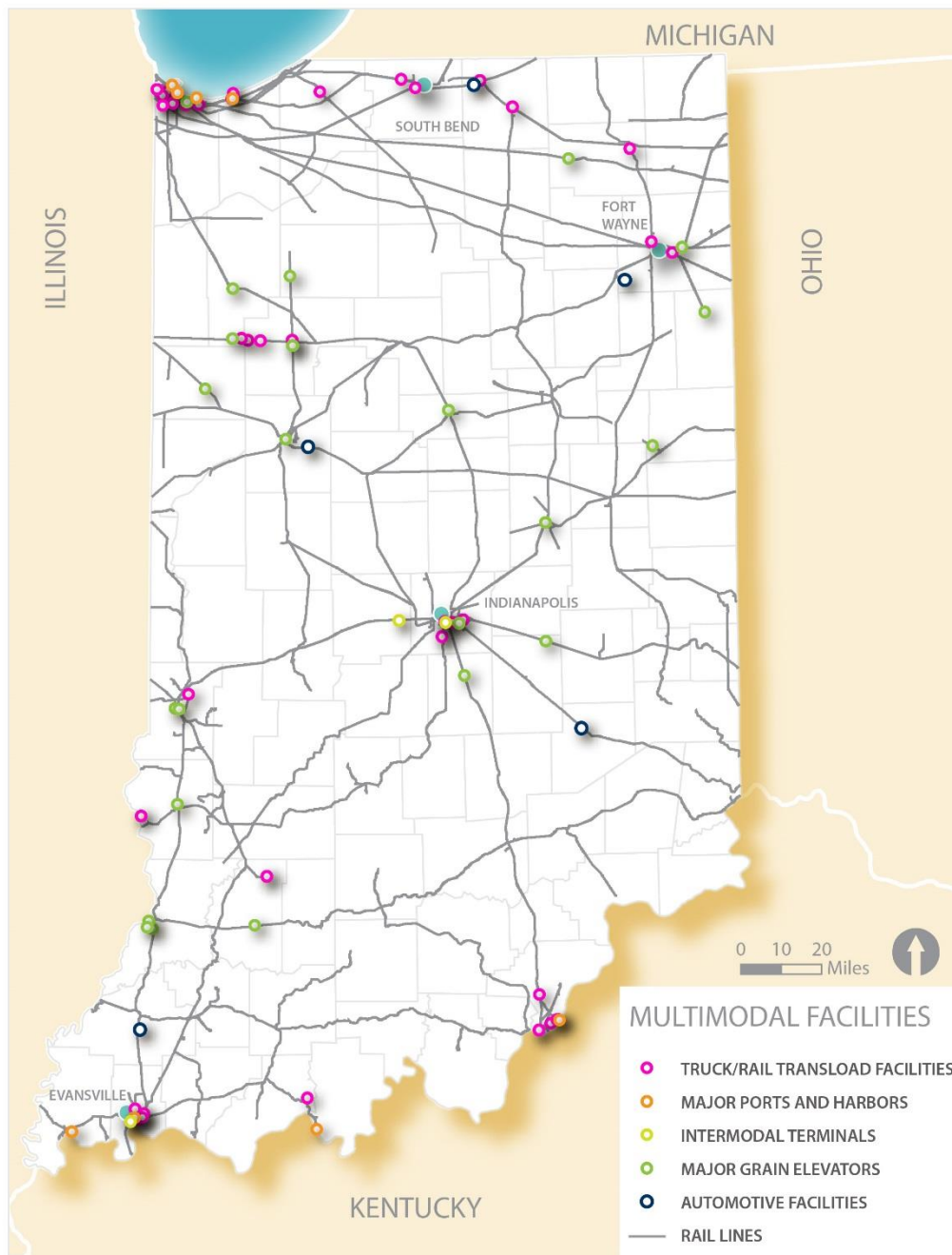
- Intermodal Terminals (container on flatcar)
- Automotive Ramps
- Transload Facilities
- Grain Elevators and other Agricultural Facilities
- Port Locations

Figure 2.13 shows the rail-served multimodal facilities in Indiana.

<sup>21</sup> TrailLink by Rails-to-Trails Conservancy.



Figure 2.13. Rail-Served Multimodal Facilities in Indiana



Source: U.S. Bureau of Transportation Statistics, other sources

### 2.2.1 Intermodal Terminals

Indiana produces and receives freight that is transported via intermodal containers. International containers are particularly critical to the import and export markets. Containers come in a variety of forms including boxes for dry freight, refrigerated goods, tankers for liquids and others. Containerization is expanding to many different types of products. For example, an interest in tracking the source of products in the food chain has led to an increase in the use of containers for export grain

shipments—an important commodity for Indiana. Railroads have been de-emphasizing trailer-on-flatcar (TOFC) service, and trailers have in many cases been replaced by 53-foot domestic container service. None of the existing intermodal terminals within Indiana handle trailers.

Chicago intermodal service has been dominant for serving portions of the surrounding states including some parts of Indiana. The high container volumes and high density of containers traveling between specific markets and Chicago drive down the cost of rail intermodal in Chicago. However, growing concerns regarding rail congestion around Chicago have improved the viability of Indiana options, including those provided by CSX and new services available over the CN network. Through the purchase of the Elgin, Joliet, and Eastern Railway Company (EJ&E), CN added a key line to its network that provides an alternative route by which trains can bypass the Chicago urban core. Indiana has been able to establish itself as an intermodal hub for some of the CN traffic that bypasses Chicago.

Until 2015, NS provided service to and from Fort Wayne with the Triple Crown service using bimodal Roadrailer equipment that could operate on both the highway and the rail. In 2015, NS closed the Triple Crown operations in Fort Wayne and provides Triple Crown service only between Detroit, MI, and Kansas City, KS.

CSX maintains two intermodal facilities in the state. These terminals connect domestically throughout the CSX network and elsewhere via connections with other Class I systems. From Indianapolis (Avon), CSX provides domestic container service to locations on the East Coast, West Coast, and Dallas, TX. East and West Coast access is also available from Evansville, IL. The CSX terminal in Indianapolis provides international container service to the East Coast but not the West Coast.<sup>22</sup>

The INRD and CN opened a joint venture in 2013 to establish an intermodal facility that offers direct service between Prince Rupert and Vancouver, British Columbia, and Indianapolis. This facility allows shippers to bypass the rail intermodal bottleneck of Chicago, thus enabling faster service to Indianapolis with no truck transfers between rail carrier intermodal ramps.

Table 2.2 lists the intermodal facilities. The lift capacity for the CSX terminals is taken from the previous rail plan. The INRD/CN numbers are taken from a publicly available presentation of the CN and INRD.

*Table 2.2. Intermodal Facilities*

Facility	Location	Serving Railroad	Annual Lift Capacity
Avon Intermodal (Indianapolis)	Avon	CSX	100,000
Evansville Intermodal	Evansville	CSX	31,000
Indianapolis Intermodal	Indianapolis	CN, INRD	24,000

Source: 2011 Indiana State Rail Plan, CN/INRD Presentation

### 2.2.2 Automotive Terminals

The automotive industry is integral to Indiana's economic development plans. In 2011, the IEDC and Conexus Indiana created the Indiana Automotive Council. The council's overarching goal is to support an economic environment that grows a stronger and more innovative automotive industry. Rail has

<sup>22</sup> <http://www.intermodal.com/index.cfm/intermodal-maps/>

emerged as a cost-effective means by which to distribute automobiles. Automobiles are shipped to regional markets in dedicated trains and then delivered to retail locations by truck. Indiana has one general-operations automotive ramp facility as well as private ramps located at specific manufacturing plants. Table 2.3 lists the locations and types of automotive facilities.

**Table 2.3. Automotive Facilities**

Facility Type	Facility Name	Location	Serving Railroad
General Automotive Distribution Facility	Elkhart Auto Terminal	Elkhart	NS
Private Automotive Facility	Subaru of Indiana	Lafayette	NS
	Toyota	Princeton	
	General Motors	Roanoke	
	Honda	Greensburg	CIND

Source: : Transportation Technology Center, Inc., American Association of American Railroads

### 2.2.3 Transload Terminals

Access to multimodal transport in Indiana allows shippers cost-effective supply chain solutions for domestic and international markets. The term “transload” refers to a broad range of facilities that enable shippers to move non-containerized freight between truck and rail. These facilities benefit shippers that do not have direct rail connections. Transloading is also used for a broad range of cargoes including bulk commodities and non-bulk commodities such as steel, building materials, and over dimensional or extremely heavy items such as turbines or other large machinery.

Transload terminals have a variety of operating models. Some—such as the CSX Transflo locations—are operated directly by the serving railroads and may be located on rail owned property. This service is often provided at the major yards of both the Class I and short-line railroads. Others are operated by third parties such as warehouse and trucking companies. Some shipper-owned locations also accept freight from outside sources. Indiana has a large number of transload facilities. (Appendix A, Table A.5 lists transload facilities.)

### 2.2.4 Grain Elevators and other Agricultural Facilities

Agricultural products are shipped and received at locations in farming communities. Many local areas and small towns have rail-served grain elevators that receive products by truck from the farms and provide storage and loading to the rail network. The same or similar facilities provide access to inbound products such as feed and fertilizer. These facilities can be operated by the railroads, large agricultural companies, and by farm cooperative organizations. (Appendix A, Table A.6 includes a partial list of rail-served grain elevators and other agricultural facilities.)<sup>23</sup>

### 2.2.5 Ports and Waterways

More than half of Indiana’s border is water, which includes 400 miles of direct access to two major international freight arteries—the Great Lakes and the Ohio-Mississippi River System.<sup>24</sup> Access to waterways allows Indiana businesses to ship and receive large quantities of heavy, dense or oversize

<sup>23</sup> No exhaustive list exists that would cover all of the rail-served elevators in the state.

<sup>24</sup> Ports of Indiana website, [www.portsofindiana.com](http://www.portsofindiana.com)



cargo in the most cost-effective manner. The waterways are the most effective way to ship some of Indiana's most important products like coal, grain, and steel to both foreign and domestic markets.

The system of waterway access includes ports operated by organized port authorities for the state and for specific communities. Ports of Indiana is a quasi-governmental entity that serves as a landlord for three of the public ports included in the inventory. Waterway access, particularly on the Ohio River, can also be provided at landings on private property operated by private-sector firms.

This inventory contains only those ports operated through a port authority. These ports have been identified as important by the U.S. Army Corps of Engineers as major port locations in the U.S. or by the organization, World Port Source. Perry County is included because they operate a public marine terminal in Tell City. Table 2.4 identifies these ports, including cargo tonnage where available.

*Table 2.4. Major Rail-Served Port Facilities in Indiana*

Port	Total Tonnage
Ports of Indiana, Mount Vernon	6,140,964
Ports of Indiana, Burns Harbor	7,969,513
Ports of Indiana, Jeffersonville	2,800,000
Indiana Harbor, East Chicago	12,354,161
Buffington Harbor, Gary	1,338,263
Port of Gary, Gary	8,669,252
Evansville Port Authority, Evansville	Not available
Perry County Port Authority, Tell City River Port	Not available

Source: Army Corps of Engineers Waterborne Commerce Statistics 2015

\*Jeffersonville Total Tonnage Press Release Ports of Indiana, February 11, 2016

## 2.3 IMPACT OF FREIGHT RAIL IN INDIANA

The importance of freight rail to Indiana is described in this section, covering the following issues:

- Congestion Mitigation
- Safety
- Trade and Economic Development
- Energy Use and Air Quality
- Land Use and Community Impacts
- Preservation of Road & Bridge Infrastructure

Section 2.7 describes the impact of passenger rail.

### 2.3.1 Congestion Mitigation

Rail decreases roadway congestion and delay by removing cars and trucks from roadways. A single 100-car train can remove hundreds of trucks from the roadways, reducing congestion. Removing trucks from the roadway is significant. Although trucks comprise only 7 percent of urban travel, they account for 18 percent of urban congestion.<sup>25</sup>

<sup>25</sup> 2015 Urban Mobility Scorecard, Texas Transportation Institute.

### 2.3.2 Safety

Rail is a relatively safe mode of transportation compared with highway travel. In contrast to trucks, except at rail-highway at-grade crossings, freight trains are physically separated from passenger vehicles operating over Indiana's roadways. Table 2.5 shows the accident rate in terms of ton-miles traveled (a ton-mile is the movement of one ton one mile). Measured by the per ton-mile rate, the risks of fatal accidents for trucks are 3.2 times higher than for rail, 4.9 times higher for injury accidents, and 6.2 times higher for property damage only accidents.<sup>26</sup>

*Table 2.5. Truck Crash and Rail Accident Rates per 10 Billion Ton-Miles (2014 National Figures)*

Type	Rail	Truck
Fatal Accidents	3.59	11.3
Injury Accidents	45.4	221
Damage Only Accidents	124	771

*Source: WSP|PB Analysis, using ton-miles from the National Freight Strategic Plan, U.S. Department of Transportation*

### 2.3.3 Trade and Economic Development

The railroad industry contributes to Indiana's economy both by employing Hoosiers and by supporting other businesses and components of the Indiana economy. The AAR estimates that in 2015, the railroad industry employed 6,223 people in Indiana with average wages and benefits per employee equaling \$103,620. In addition, 19,500 railroad retirement beneficiaries live in the state.

In addition to these direct employment impacts, the railroad industry contributes indirectly through industries that rely on rail.

Rail shipping tends to be slower but less expensive relative to truck shipping. Rail can provide cost savings to those shippers whose supply chains permit usage of rail. As an economic development tool, rail is attractive to a wide array of businesses, and is recognized by local economic development professionals as helpful in attracting new businesses. Keeping rail infrastructure in good operating condition is likewise critical for business retention.

While not every freight trip can be made by rail, an analysis of the STB Carload Waybill Sample and average truck rates estimates that an average savings of \$0.025/ton-mile is achieved by switching from truck to freight rail. This estimate is based only on commodity types that can be carried on either mode, and represents an average comparison of rail and truck costs, which vary by length of trip, size of shipment, and other factors. Many of the commodities shipped by rail compete in global markets, where prices are set internationally. Because prices are set by global markets, small cost savings can have major impacts on the competitiveness of Indiana shippers, allowing companies to meet certain threshold prices.

<sup>26</sup> Injuries associated with truck and rail transportation are reported differently. Trucking statistics are reported as "crashes," in which a truck strikes something. In the case of rail, most reported injuries do not involve a train hitting something. Rather, railroads are required to report any on-the-job injury or illness, most of which do not involve train equipment striking anything.

### 2.3.4 Environmental: Energy Use and Air Quality

Rail moves freight with lower environmental impacts compared to trucking. According to an independent study done for the FRA, railroads are on average four times more fuel efficient than trucks, moving a ton of freight 473 miles per gallon of fuel. Other studies show similar results: a TTI study for 2001–2009<sup>27</sup> showed trains moving a ton of freight 478 miles on a gallon of fuel, compared to trucks moving the same load only 150 miles on a gallon of fuel. This fuel efficiency translates into substantially lower emissions of greenhouse gases per ton-mile of freight moved.

Emissions of National Ambient Air Quality Standards “criteria pollutants” are expected to decline for both truck and rail as new emissions standards for both take effect. Railroad locomotives generate fewer emissions than trucks because each locomotive hauls many tons of freight relative to trucks. But locomotives can remain in service for 20 to 40 years, whereas truck tractors in long-haul service are retired after 5 to 10 years of service. Therefore, older, higher emitting locomotives remain in service for longer. Nevertheless, rail is expected to remain a lower emission transportation mode into the future (Table 2.6).

Table 2.6. Comparison of Truck and Rail Emission Rates

CO <sub>2</sub> and Criteria Pollutants	Rail (adjusted for circuitry)			Truck (adjusted for empty miles)		
	2015	2030	2040	2015	2030	2040
Nitrogen Oxides grams/ton-revenue mile	0.3178	0.1044	0.0475	0.5828	0.1765	0.1437
Particulate Matter grams/ton-revenue mile	0.0084	0.0020	0.0007	0.0232	0.0034	0.0019
Volatile Organic Compounds grams/ton-revenue mile	0.0148	0.0039	0.0018	0.0611	0.0273	0.0243
Carbon Dioxide grams/ton-revenue mile	25.033	20.023	17.253	92.197	80.458	79.232

Source: WSP | Parsons Brinckerhoff Analysis. Trucking emissions rates were derived by a simulation using the U.S. Environmental Protection Agency’s Motor Vehicle Emission Simulator mode (EPA MOVES Model, assumed long-haul vehicles driving at 55 mph), assuming combination trucks hauling long distances (moves of over 200 miles).

### 2.3.5 Land Use and Community Impacts

If improperly planned, rail can generate land use conflicts associated with blocked crossings, noise and other impacts. In the past, rail yards and factories that used rail service were often located adjacent to residential areas so that workers could walk to their jobs. In some cases, these rail facilities remain in downtown areas and are not always consistent with downtown redevelopment plans. Some urban areas have considered rail bypass projects, which aim to route freight rail operations away from city centers.

### 2.3.6 Preservation of Road and Bridge Infrastructure

Rail helps to preserve road and bridge infrastructure by reducing the number of heavy trucks on roadways. Although trucks account for far less of the traffic on roadways than passenger vehicles, each truck causes more damage to roads and bridges than automobiles. Road and bridge damage is

<sup>27</sup> Highlights of “A Modal Comparison of Domestic Freight Transportation Effects on the General Public: 2011-2099” Texas Transportation Institute February 2012, as cited in Waterways: Working for America, National Waterways Foundation.

generally a function of a truck's weight, the number of axles on which that weight is distributed, and the distance between axles. The addendum to the 1997 Federal Highway Cost Allocation Study, for example, found that the marginal pavement cost in cents per mile of an 80,000-pound truck was nearly four times that of a 60,000-pound truck.<sup>28</sup>

### 2.3.7 Case Studies

#### WHITE RIVER BRIDGE

In 2013, INDOT received federal funding to replace the White River rail bridge (Figure 2.14), which carries The Indiana Rail Road (INRD) in Greene County. Built in 1899, the bridge was in poor condition, with weight limitations (263,000 pounds), and speeds restricted to 10 miles per hour. The White River Bridge negatively impacted the entire rail line. Except for the bridge, the line was rated for 286,000-pound rail at 40 miles per hour.

The businesses served by the rail system are important to the economies of six counties and include the third-largest employer in southern Indiana (Crane NSA). The bridge also links Indiana coal mines with a major Indianapolis Power & Light power station in Princeton, Indiana.



Figure 2.14. Old White River Bridge

Today, the new bridge carries 286,000-pound rail cars, which can now travel 40 mph without slowing for the bridge crossing. The crossing continues to be used by the customers who have relied on it for years, and is gaining new customers thanks to the INRD transload facility built nearby in Odon to serve customers without direct rail access.

An economic analysis to determine the benefits of the project found the following:

- Savings to railroad customers on outbound loads (rail vs. truck). The National Security Administration estimated that the transportation cost of munitions moved by truck is 76 percent more than if moved by rail.
- Savings on some railcar loads resulting from the ability to fill cars to the new 286,000-pound limit
- Savings on inbound shipments by giving customers improved access to more distant markets, which in turn increases supply options and often results in lower prices.
- Reduced truck vehicle-miles traveled (VMT) by avoiding a shift to truck associated with existing traffic having to divert from rail
  - Less damage to roads resulting from reduced truck VMT – estimated to save \$400,000 per year in pavement maintenance costs for roads in Indiana and other states

<sup>28</sup> <https://www.fhwa.dot.gov/policy/hcas/addendum.cfm>

- Air quality benefits from reduced truck VMT – a net reduction of 1,584 tons of CO<sub>2</sub> annually
- Sustainability – moving freight by rail saves an estimated 1,584 gallons of diesel per year compared to truck
- Safety benefits resulting from reduced truck VMT – valued at over \$300,000 per year

Overall, these and other project benefits were estimated at \$70 million over a 20-year period, a value much higher than the project's \$13 million construction cost.

### PLAINVILLE SIDING PROJECT

The Plainville Siding Project constructed an 8,200-foot siding on the Indiana Southern Railroad (ISRR) rail line just south of Elnora and was completed in 2014. The total project construction cost was about \$2 million, of which \$1.6 million was funded from the FRA. The need for the siding arose from the construction of a coal gasification plant on the ISRR Hawthorne Branch in Edwardsport. ISRR had used the Hawthorne Branch to stage cars for interchange with the INRD. But with the construction of the new gasification plant and trains bringing coal from Bear Run Mine to the plant, ISRR could no longer stage cars on the Hawthorne Branch. The Plainville siding now allows ISRR to stage cars south of Elnora instead.

This project has had several benefits:

- Enables Duke Energy to bring 1.5 tons of coal per year by rail from the Bear Run Mine to the Edwardsport plant rather than truck the coal to the plant, thus avoiding costs associated with the truck trips that otherwise would have occurred. Over a 20-year period, this will include \$15 million in fuel saving benefits, \$1.2 million in safety benefits, \$1 million in highway and congestion benefits, \$1.2 million in avoided truck noise, and \$1 million in emissions savings.
- Creates \$3.2 million in present value operating benefits over the 20-year period. These benefits result from more efficient train crew utilization made possible by the project. The project also enables unit trains to pass one another, so that trains no longer need to wait for each other at opposite ends of the railroad.
- Adds capacity and better rail service to other shippers in the area, such as Boyd Grain

The total present value of project benefits over the 20-year project period was found to be \$20 million compared to investment and ongoing costs with a present value of \$6 million.

## 2.4 PASSENGER RAIL SERVICES IN INDIANA

As mentioned in Chapter 1, this State Rail Plan covers intercity passenger rail and commuter rail. Tourist/ excursion railroads will also be discussed because they have economic development and rail corridor preservation significance.

### 2.4.1 Intercity Passenger Rail

Five Amtrak intercity passenger rail routes serve stations within Indiana. In addition, Hoosiers can access additional intercity passenger rail services that serve stations across the border in Michigan and Illinois. (Appendix A, Tables A.7 and Table A-8 list the summary of intercity passenger rail stations

in Indiana. Of the five routes that serve stations in Indiana, three—the *Cardinal*, the *Capitol Limited*, and the *Lake Shore Limited*—are long-distance trains with routes over 750 miles. As such, costs not covered by passenger revenues are paid for by Amtrak and Amtrak federal subsidies. By contrast, the *Hoosier State* service is funded by INDOT and local governments on the line, while the *Wolverine* is supported by the State of Michigan.

Amtrak began operations in 1971 following the passage of the Rail Passenger Service Act in 1970. While established as a for-profit corporation, Amtrak has required federal grants and loans since its inception. Numerous states now also provide funding to Amtrak as part of state-supported intercity passenger rail service, in part as a requirement of PRIIA, which withdrew funding for Amtrak routes less than 750 miles. As a quasi-government entity, Congress and the USDOT oversee Amtrak's stewardship of federal funds through grant agreements and appropriations provisions. Amtrak's Board communicates with the federal government through monthly and annual reports as well as business and strategic plans. Table 2.7 displays intercity passenger routes in Indiana.

As shown in Figure 2.15, passenger rail services within Indiana are provided over three corridors: one in the northwest corner of the state (used by the *Wolverine* service), another that crosses northern Indiana east-west (used by the *Lake Shore Limited* and the *Capitol Limited* services), and another southeast to northwest (used by the *Cardinal* and the *Hoosier State* services). Additional connecting service is provided by the Amtrak Thruway Bus Service, which are dedicated buses that are coordinated with train schedules and wait for train arrivals and departures.

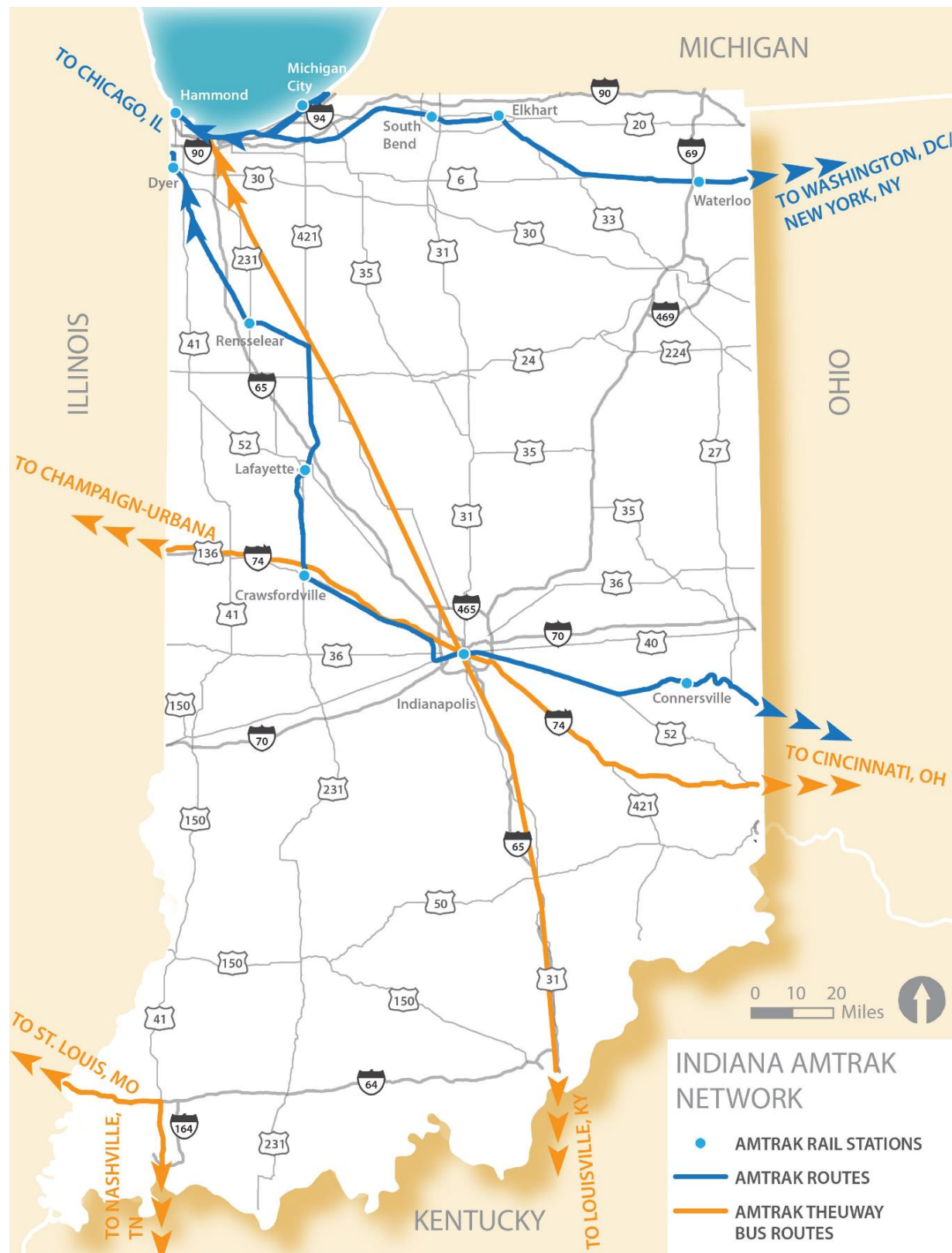
Table 2.7. Intercity Passenger Routes Serving Stations in Indiana

Route	Type of Service	Total Route Mileage	Mileage in Indiana	Service Frequency (each direction)	End Point Stations	Stations in Indiana
Hoosier State	Indiana state (and locally) supported	196	170	One train four days per week	Indianapolis, IN and Chicago, IL	Indianapolis, Crawfordsville, Lafayette, Rensselaer, Dyer
Cardinal	Long-Distance	1,147	225	One train three days per week (opposite Hoosier State schedule)	New York, NY and Chicago, IL	Connersville, Indianapolis, Crawfordsville, Lafayette, Rensselaer, Dyer
Capitol Limited	Long-Distance	780	140	One train daily	Washington, DC and Chicago, IL	Waterloo, Elkhart, South Bend
Lake Shore Limited	Long-Distance	959 (New York to Chicago) 1,017 (Boston to Chicago)	140	One train daily with cars to/from Boston and New York coming together at Albany-Rensselaer, NY	Boston, MA, New York, NY and Chicago, IL	Waterloo, Elkhart, South Bend
Wolverine	Michigan state supported	304	48	Three trains daily, but two stop at Hammond –Whiting and Michigan City northbound, two stop at Hammond-Whiting southbound, one stops at Michigan City southbound	Chicago, IL and Pontiac, MI	Michigan City, Hammond-Whiting

Source: Amtrak, [www.hoosierstatetrain.com](http://www.hoosierstatetrain.com)



Figure 2.15. Intercity Passenger Rail Routes in Indiana

Source: INDOT, Amtrak, [www.hoosierstatetrain.com](http://www.hoosierstatetrain.com)

### 2.4.2 Commuter Rail

Commuter rail within Indiana is provided by the NICTD, which operates the South Shore Line between Millennium Station in Chicago and the South Bend International Airport in South Bend (Figure 2.16). NICTD is governed by a Board of Trustees representing the four Indiana counties served by the South Shore Line as well as two board members appointed by the governor of Indiana. It was created in 1977 and operated but did not own the line until 1989 when NICTD took ownership of the South Shore Line following the bankruptcy of the freight operator that had owned the line.

Figure 2.16. South Shore Line Map



Source: Northern Indiana Commuter Transportation District

Commuter trains on the South Shore Line are powered through an electric catenary system. The line is dispatched using CTC. The western portion of the line is double tracked to a point just east of Gary Metro Center. East of this point, the line is primarily single track.

NICTD operates 43 trains each weekday and 20 trains per day on the weekend. Each weekday, 19 trains travel between Chicago and Michigan City (Carroll Ave), while 10 travel the entire length of the line between Chicago and South Bend Airport, 10 between Gary and Chicago, and four between South Bend Airport and Michigan City (Carroll Ave). (See Tables A.9 and A.10 in Appendix A.)

Currently, the Chicago South Shore and South Bend Railroad, a subsidiary of Anacostia Pacific Holdings, provides freight service over the line through an agreement with NICTD.

### 2.4.3 Excursion/Tourist Railroads

Excursion railroads own 66 miles of the Indiana rail network. These railroads provide passenger service whose purpose is not transportation but rather entertainment. The railroads are helpful to local economies in that they attract tourist spending. They are also useful for rail corridor preservation, since they often operate over tracks that would otherwise have been taken out of service and potentially

abandoned. Since they frequently rely on volunteer labor and contributions, they can maintain rail lines that otherwise would not be economically viable. Because they operate passenger service, excursion operators must maintain tracks at FRA Track Class 1 or better. Excursion operators in Indiana include the following:

- Hoosier Heritage Port Authority (HHPA) owns 37.5 miles of rail line between Tipton and downtown Indianapolis.
- The French Lick Scenic Railway operates on nine miles of track running southward from French Lick in southern Indiana.
- The Whitewater Valley Railroad owns a 19-mile line that runs from Connersville to Metamora. The organization operates regular trains on weekends, as well as special trains.
- The Hoosier Valley Railroad operates over a 10-mile roundtrip on the Judson Branch on trackage owned by the town of North Judson.

## 2.5 PASSENGER RAIL STATIONS

### 2.5.1 Intercity Passenger Rail Stations

Recently, significant interest has been devoted to the role of passenger rail stations in promoting economic development. Large traditional railroad stations like Union Station in Denver, CO, or Union Station in Washington, DC, have attracted retail development.

Intercity passenger rail station facilities are either platforms with or without shelters or structures with enclosed waiting rooms. Two of Indiana's stations—Elkhart and Lafayette—occupy historic structures. The other nine stations provide more utilitarian shelters or none at all. Only two of the stations are staffed—Indianapolis and South Bend. Both have checked baggage service.

Under the Americans with Disabilities Act (ADA) of 1990, Amtrak is required to require all stations under its responsibility readily accessible and usable by individuals with disabilities, including those in wheelchairs. Facilities include station structures, platforms, and parking lots.

Appendix A, Tables A.7 and A.8 list Indiana's intercity passenger rail stations.

### 2.5.2 Commuter Rail Stations

Appendix A, Tables A.9 and A.10 list NICTD stations in Indiana. Similar to intercity passenger rail stations, significant interest surrounds the economic development implications of commuter rail stations. The NICTD 20-Year Strategic Business Plan mentions the opportunity of Transit-orientated development (TOD) (mixed-use development concentrated within station area), but states that the responsibility for planning these developments primarily falls to local jurisdictions.<sup>29</sup> NICTD owns most of the Indiana stations. Two stops are flag stops, where waiting passengers must activate a strobe light alerting the approaching train's operator to stop at the station. Two stations are staffed. Seven have ticket vending machines. One station houses NICTD's administrative office. At the five stations with neither ticket vending machines nor ticketing staff, boarding passengers can pay cash fares to

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<sup>29</sup> Northwest Indiana Regional Development Authority, *20-Year Strategic Business Plan*, May 2014.

the train crew. Most stations have transit connections, although parking remains an important issue to ridership capacity of NICTD stations. All except the South Bend Station are in the Central Time Zone.

## 2.6 PASSENGER RAIL RIDERSHIP AND PERFORMANCE

### 2.6.1 Intercity Passenger Rail Ridership and Performance

Intercity passenger rail ridership peaked nationwide in 2013 at 31.7 million passengers and then declined slightly to 30.7 million passengers in 2015<sup>30</sup>, rising to 31.4 million in 2016. Amtrak representatives attribute the 2013, 2014, and 2015 decline to two factors.

- Deteriorating on-time performance. At 83 percent of trains arriving on-time, overall system-wide on-time performance in 2012 was the best Amtrak had achieved since at least 1990.<sup>30</sup> Performance in 2013 was almost as favorable at 82.3 percent. But in 2014 the growth of crude-by-rail plus other factors caused the U.S. rail network to become congested. On-time performance deteriorated to 72.4 percent in 2014 and remained low in 2015 at 71.2 percent.
- Lower gas prices. Train travel is less fuel-intensive compared to automobile travel. Average retail prices of gasoline declined 31 percent between 2013 and 2015.<sup>31</sup> This caused some passengers to shift from train travel as the costs of automobile travel declined.

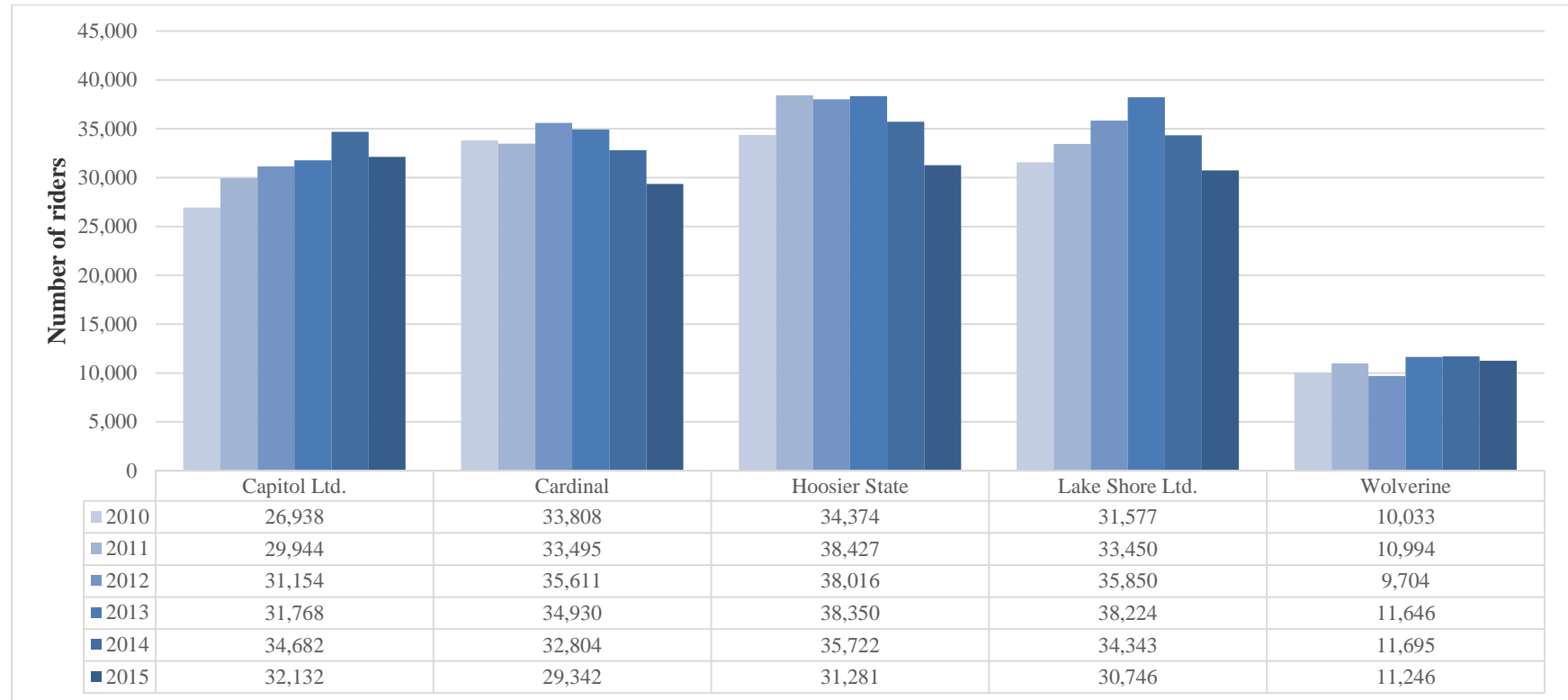
Passenger rail ridership on intercity trains within Indiana has more or less followed national trends, peaking for most routes at around 2012 or 2013 but then declining since then. Ridership on the *Hoosier State* and the *Cardinal* services may also have been affected by the withdrawal of federal funding for *Hoosier State* service effective October 2013 and the brief period of uncertainty that followed. Figure 2.17 and Table 2.8 display trends for riders that got onto or off of trains within Indiana. Indianapolis is Indiana's busiest station, followed by South Bend. Amtrak estimates that it operated 17,374,133 passenger-miles in Indiana in federal fiscal year 2016 (ended September 30, 2016).<sup>32</sup>

<sup>30</sup> U.S. Bureau of Transportation Statistics.

<sup>31</sup> U.S. Energy Information Administration.

<sup>32</sup> "Amtrak's Contributions to Indiana," <https://www.amtrak.com/ccurl/415/454/Indiana-fy16.pdf>.

Figure 2.17. Ridership Trends of Amtrak Routes in Indiana (Ons and Offs within Indiana)



Source: Amtrak

**Table 2.8. Intercity Passenger Rail Ridership by Station and Route – Ons and Offs (October 2014 – September 2015)**

Station	Capitol Ltd.	Cardinal	Hoosier State	Lake Shore Ltd.	Wolverine	Grand Total
Connersville		770				770
Crawfordsville		2,453	2,847			5,300
Dyer		1,687	1,776			3,463
Elkhart	11,347			9,394		20,741
Hammond-Whiting					7,463	7,463
Indianapolis		15,491	14,660			30,151
Lafayette		8,122	10,727			18,849
Michigan City					3,783	3,783
Rensselaer		819	1,271			2,090
South Bend	10,691			11,416		22,107
Waterloo	10,094			9,936		20,030
Grand Total	32,132	29,342	31,281	30,746	11,246	134,747

Source: Amtrak

Section 207 of PRIIA requires that Amtrak and the FRA jointly develop route-specific performance measures to assess Amtrak operations, to provide Amtrak and government agencies with an indication of where improvements are required. Section 207 also includes targets for each of these performance measures. The most recent FRA/Amtrak performance measures cover the period through September 30, 2016 (fourth quarter of the federal fiscal year). Not all metrics are specific to Amtrak routes, and not all information is available, but those performance metrics that are both applicable to specific Amtrak routes and available are shown in Table 2.9.

**Table 2.9. PRIIA Section 207 Amtrak Performance Metrics**

Type of Metric	Performance Metric
Financial	Change in percentage of fully allocated operating cost covered by passenger revenue
	Passenger-miles per train-miles
On-Time Performance	Change in Effective Speed
	Endpoint On-Time Performance
	All-Station On-Time Performance
	Host-Railroad Delay Minutes per 10,000 Train-Miles
	Amtrak Responsible Delay Minutes per 10,000 Train-Miles
Other Service Quality	Amtrak Customer Service Index – Overall Service
	Amtrak Customer Service Index – Amtrak Personnel
	Amtrak Customer Service Index – Information Given
	Amtrak Customer Service Index – On-Board Comfort
	Amtrak Customer Service Index – On-Board Cleanliness
	Amtrak Customer Service Index – On-Board Food Service

Source: PRIIA Section 207 Website

Two metrics are used to track financial performance. One reflects the percentage of fully allocated operating costs covered by passenger-related revenue. This statistic reflects the extent to which Amtrak routes pay for themselves. Amtrak reports recovery ratios both including and excluding state subsidies. Results shown in Table 2.10 exclude state subsidies in the recovery ratio. The performance



standard is annual improvement over two-year rolling averages. As shown below, the *Hoosier State* service's cost recovery ratio was low to begin with but improved during the time period. The most recent FRA/Amtrak performance measures cover the period ending September 30, 2016 (fourth quarter of the federal fiscal year).

**Table 2.10. Change in Percentage of Fully Allocated Operating Cost Covered by Passenger Revenue**

Train	October 2013 – September 2015	October 2014 - September 2016	Change
Cardinal	35%	33%	-2%
Hoosier State	13%	18%	5%
Capitol Limited	44%	43%	-1%
Lakeshore Limited	46%	40%	-6%
Wolverine	30%	22%	-8%

Source: PRIIA Section 207 Website

Table 2.11 displays the results of the other financial metric—passenger-miles per train-mile. This reflects the load factor of Amtrak trains (i.e., how many people are on a train at any given time). The standard is also annual improvement of two-year rolling averages. The results suggest that load factors have generally declined.

**Table 2.11. Passenger-Miles per Train-Mile**

Train	October 2013 – September 2015	October 2014 – September 2016	Change	Percentage Change
Cardinal	123	119	-4	-3%
Hoosier State	61	58	-3	-5%
Capitol Limited	192	184	-8	-4%
Lakeshore Limited	215	199	-16	-7%
Wolverine	147	143	-4	-3%

Source: PRIIA Section 207 Website

The FRA and Amtrak developed the following metrics to evaluate route performance in terms of on-time performance and train delays:

- Change in Effective Speed, to be calculated on a rolling four-quarter basis and compared to a fixed FY2008 baseline
- Percentage of trains on-time at endpoint of the route
- Percentage of trains on-time all stations on the route

The standard for on-time performance (OTP) is 80 percent. Amtrak defines OTP as the total number of trains arriving on-time at a station divided by the total number of trains operated on that route. A train is considered on-time if it arrives at the final destination within an allowed number of minutes, or tolerance, of its scheduled arrival time.<sup>38</sup> Table 2.12 provides FY2016 OTP statistics for train routes through Indiana. The results suggest that train speeds have improved since FY2008 for each route but the *Lakeshore Limited*. All routes except the *Hoosier State* have not met this standard. Red in Table 2.12 indicates that the standard was not met.

<sup>38</sup> For example, trains traveling 250 miles or less are allowed a 10 minute tolerance, while trains over 550 miles are allowed a 30 minute tolerance, which is the maximum allowed.

Table 2.12. On-time Performance Statistics for Intercity Passenger Routes Serving Indiana

Train	Change in Effective Speed (mph) FY2008 to 12 months ended 9/16	Endpoint OTP FY2016	All-Station OTP FY2016
Cardinal	1.2	53.53%	50.40%
Hoosier State	3.6	82.90%	82.10%
Capitol Limited	1.3	68.83%	58.70%
Lakeshore Limited	-0.4	57.80%	53.18%
Wolverine	3.6	65.70%	69.98%

Source: PRIIA Section 207 Website

Under PRIIA, if OTP of any intercity passenger route averages less than 80 percent for two consecutive calendar quarters, an investigation can be initiated to determine whether and to what extent delays are due to causes that could be reasonably addressed by the rail operator or the host railroad. The freight rail industry has challenged the constitutionality of PRIIA OTP requirements, questioning the authority of Amtrak, the FRA, or the STB to establish and enforce these metrics. The STB established new rules regarding how OTP should be measured in July 2016.<sup>39</sup>

Amtrak/FRA metrics also consider the cause of delays:

- *Train interference* delays including freight train, passenger train, commuter train interference result from meeting or following other trains in the area
- *Signal delays* are related signal failures or signal maintenance. Included are delays from reduced speeds to allow safe operation due to the signal problems
- *Slow order* delays result from temporary reductions in allowable train speeds, except for heat or cold orders
- *Routing delays* are caused by delayed dispatch, diversions, late track bulletins, etc.

For routes that pass through Indiana, host-railroad responsible delays are expected to be no more than 900 minutes per 10,000 train-miles. As can be seen from Table 2.13, each Amtrak service through Indiana exceeds 900-minute standard for host-railroad delays, so that only on its own lines do Amtrak trains not exceed the 900-minute standard.

<sup>39</sup> STB Decision, Docket No. EP 726, On-Time Performance under Section 213 of the Passenger Rail Investment and Improvement Act of 2008, July 28, 2016.

Table 2.13. Host-Railroad Responsible Delays in Minutes Delay per 10,000 Train-Miles 4th Quarter FY2016

Train	Host	Total Delay (Min)	Largest Delay Category		2nd Largest Delay Category	
			Cause	Minutes	Cause	Minutes
Cardinal	BBrRR	1,636	Passenger Train Interference	709	Slow Order Delays	414
	CSX	1,041	Slow Order Delays	328	Freight Train Interference	313
	NS	1,432	Slow Order Delays	513	Freight Train Interference	342
Hoosier State	CSX	919	Freight Train Interference	355	Slow Order Delays	264
Capitol Limited	CSX	948	Freight Train Interference	357	Slow Order Delays	235
	NS	1,695	Freight Train Interference	914	Routing	355
Lakeshore Limited	Amtrak	322	Signal Delays	143	Slow Order Delays	110
	CSX	1,150	Freight Train Interference	393	Slow Order Delays	187
	MBTA	3,125	Commuter Train Interference	2,459	Slow Order Delays	188
	MNRR	1,535	Commuter Train Interference	904	Routing	187
	NS	1,749	Freight Train Interference	1,144	Passenger Train Interference	193
Wolverine	Amtrak	556	Passenger Train Interference	215	Signal Delays	142
	CN	2,759	Slow Order Delays	1,315	Freight Train Interference	917
	MIDOT	1,640	Slow Order Delays	1,014	Passenger Train Interference	388
	NS	2,144	Freight Train Interference	876	Signal Delays	681

Source: PRIIA Section 207 Website

Amtrak and FRA have also determined a standard of 325 minutes or less per 10,000 train-miles for Amtrak responsible delays. As can be seen from Table 2.14, the *Wolverine* and *Capitol Limited* are the only services that pass through Indiana for which this standard has been met. Values that exceed the standard are indicated in red.

- Passenger-related delays include all delays related to assisting passengers. These delays include holding a station departure for passengers boarding or detraining, checked baggage and any necessary delays for providing appropriate assistance to disabled passengers.
- Locomotive and car failure refer to mechanical failure on all types of cars and locomotives.
- Hold for connection delays result from trains being held to accommodate delayed connections from other trains and buses.
- Crew & system delays relate to crews, including lateness, lone-engineer delays.

Table 2.14. Amtrak Responsible Delays in Minutes Delay per 10,000 Train-Miles 4th Quarter FY 2016

Train	Total Delay (Min)	Largest Delay Category		2nd Largest Delay Category	
		Cause	Minutes	Cause	Minutes
Cardinal	561	Crew & System	133	Passenger Related	121
Hoosier State	411	Crew & System	195	Locomotive Failure	81
Capitol Limited	274	Passenger Related	127	Crew & System	46
Lakeshore Limited	440	Passenger Related	223	Crew & System	89
Wolverine	315	Passenger Related	80	Miscellaneous Delays	74

Source: PRIIA Section 207 Website

Another performance metric relates to a customer satisfaction survey that Amtrak administers to its customers. The Amtrak Customer Service Index is derived from the survey responses. Topics cover a broad range of customer experiences on and off the train. Standards require that for most topics, a “very satisfied” rating is received from 80 percent of respondents; however, the standard for overall service is 82 percent. As shown in Table 2.15, the standard was met in all applicable categories for the *Hoosier State*, for overall service and Amtrak personnel for the *Capitol Limited* and *Wolverine*, and on-board cleanliness for the *Wolverine*.

**Table 2.15. Amtrak Customer Service Index for FY2016**

Train	Overall Service	Amtrak Personnel	Information Given	On-Board Comfort	On-Board Cleanliness	On-Board Food Service
Cardinal	74	78	68	56	75	54
Hoosier State	87	95	85	85	88	N/A*
Capitol Limited	82	86	75	73	79	70
Lakeshore Limited	72	82	65	59	73	63
Wolverine	82	88	77	72	81	67

Source: PRIIA Section 207 Website

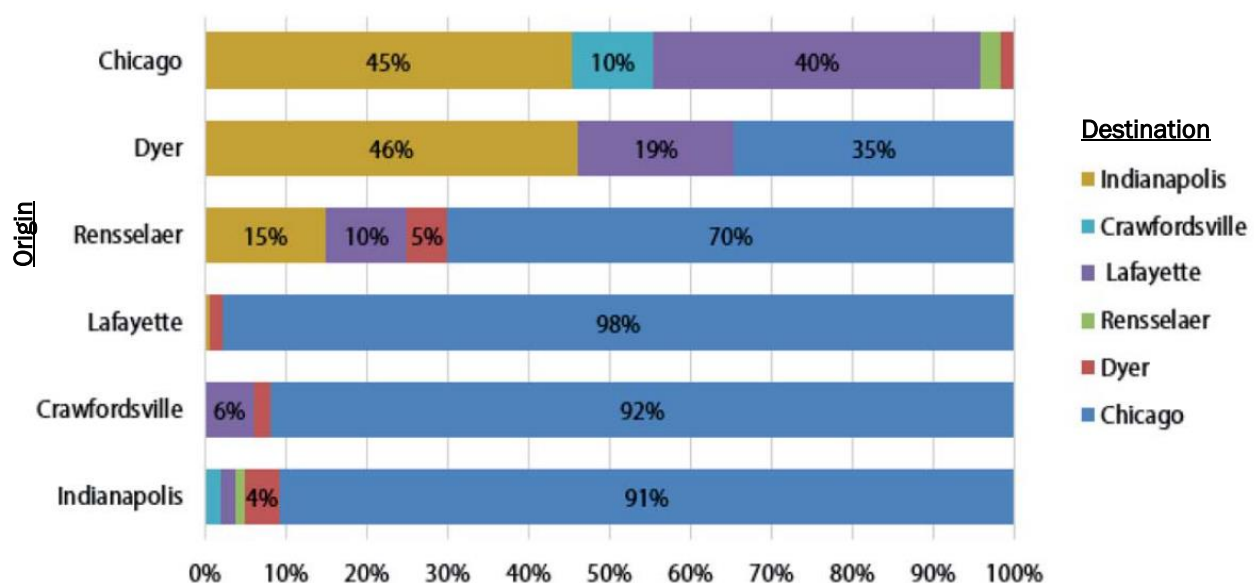
\* Although food was available on the *Hoosier State*, Amtrak did not survey or record CSI scores for on-board food service.

## 2.6.2 Hoosier State Ridership and Performance

Because INDOT and local governments have assumed financial responsibility for *Hoosier State* service, it is worth investigating the ridership and performance of this service in additional detail. The largest origin-destination pairs for *Hoosier State* service are Chicago–Indianapolis, and Chicago–Lafayette. Figure 2.18 displays the results from a survey of *Hoosier State* passengers taken over nine days in November and December 2016.<sup>40</sup> As shown, Chicago is the destination for over 90 percent of riders boarding in Lafayette, Crawfordsville, and Indianapolis. Indianapolis is the destination for 45 percent of passenger boarding in Chicago, followed by Lafayette, which is the destination for 40 percent of Chicago passengers.

<sup>40</sup> Purdue University Joint Transportation Research Program, *SPR 4044: Evaluating Opportunities to Enhance Hoosier State Train Ridership through a Survey of Riders’ Opinions and an Assessment of Access to the Line*.

Figure 2.18. Origin-Destination Pairs of Hoosier State Ridership (2016)



Source: Purdue Joint Transportation Research Program

The survey also found that 59 percent of respondents reside in Indiana, while 20 percent reside in Illinois, and the rest are distributed across multiple states. Twenty-three percent of riders came from counties with no stations.

It is pertinent to consider service performance of *Hoosier State* service since August 2015. When INDOT assumed responsibility for *Hoosier State* service, the service suffered from poor OTP and low ridership. INDOT exercised the option in PRIIA that allowed state sponsoring agencies to contract out some or all the services provided by Amtrak. The new third-party provider—Iowa Pacific Holdings—began service on August 2015. Iowa Pacific Holdings provided train equipment and maintenance, on-board services, and marketing through February 28, 2017. Amtrak became responsible for the train equipment and on-board services on March 1, 2017, and continues to provide operating crews and ticketing, and to work with the host railroads. Since August 2015, *Hoosier State* service has improved.

Figure 2.19, Figure 2.20, and Figure 2.21 compare the performance of the route during federal fiscal year 2015 (October 2014 – September 2015) to federal fiscal year 2016 (October 2015 – September 2016). Revenue increased. This was due in large part to new business class services, which resulted in higher ticket yields. OTP has also improved. Ridership is the one area to have declined slightly.

Figure 2.19. Hoosier State Revenue

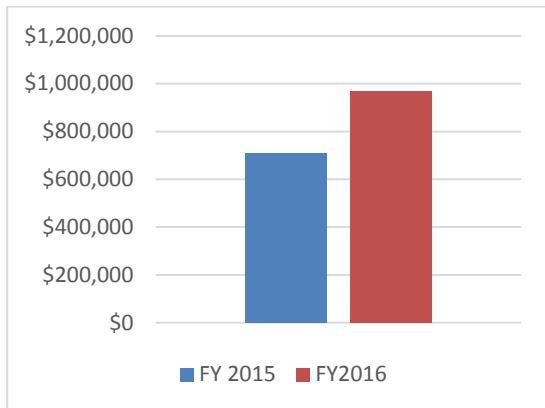


Figure 2.20. Hoosier State Average Monthly On-time Performance

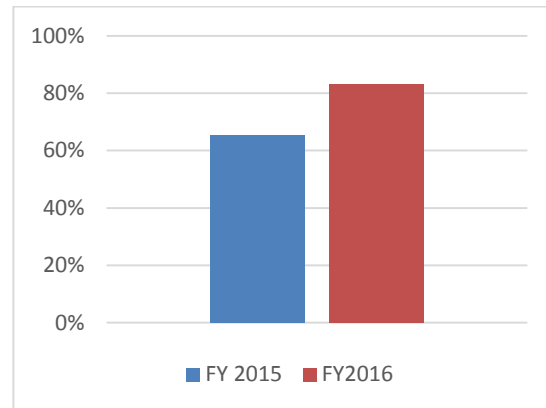
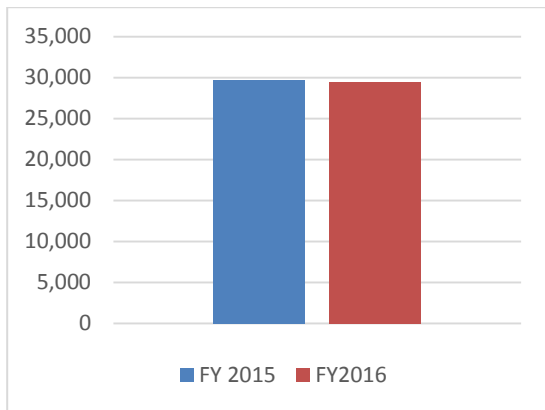


Figure 2.21. Hoosier State Ridership



Source: INDOT

On March 1, 2017, Amtrak took over the functions on *Hoosier State* service previously performed by Iowa Pacific Holdings, but while Iowa Pacific Holding's involvement has ended, involving this third party can nevertheless be counted a success. Iowa Pacific Holding inserted the element of competition. NICTD Ridership and Performance

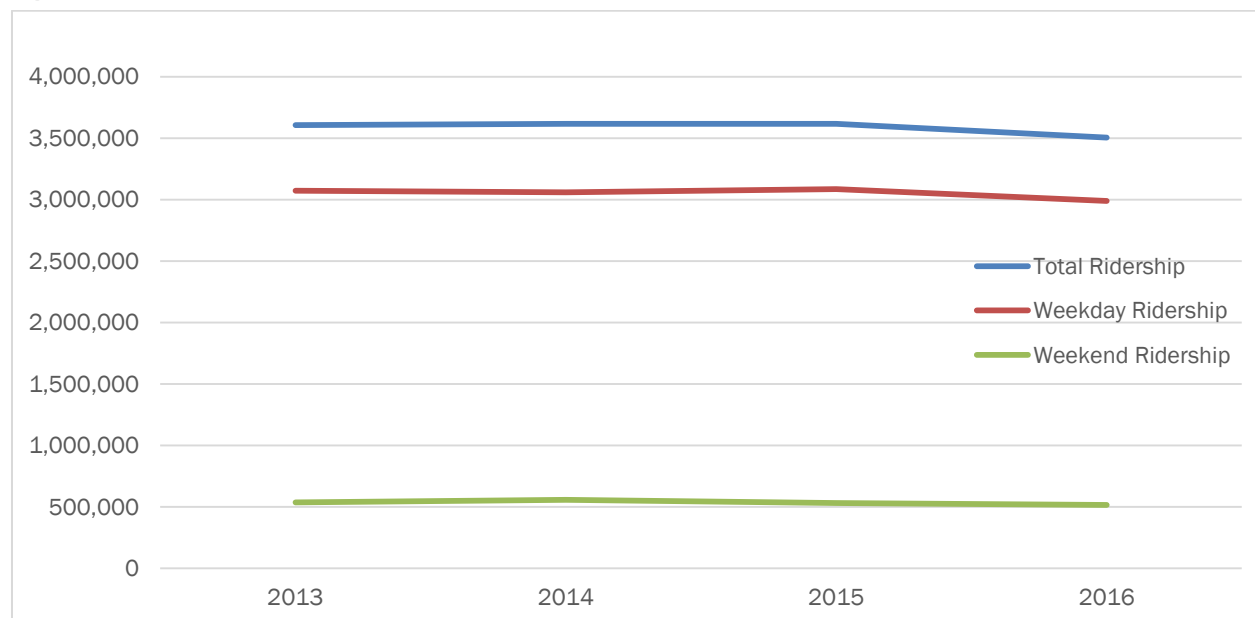
In 2016, NICTD carried 3.5 million passengers of which 3.0 million were weekday riders and 0.5 million were weekend riders. Ridership dipped slightly in 2016 (Figure 2.22).

NICTD's average OTP in 2016 was 81.8 percent compared to 86.5 percent achieved in 2015. A NICTD train is considered to be on-time when it arrives at its terminal within 5 minutes and 59 seconds of its scheduled arrival time. OTP for peak rush-hour trains was 89.3 percent in 2016, a minor drop from the 91.6 percent achieved in 2015. This is relatively higher compared to the five-year period from



2006 to 2010 when it varied between a low of 71.4 percent in 2008 and a high of 86.1 percent in 2010. As of 2015, the operating subsidy per unlinked trip for NICTD was \$6.01.<sup>41</sup>

**Figure 2.22. Northern Indiana Commuter Transportation District Annual Ridership**



Source: Northern Indiana Commuter Transportation District

## 2.7 IMPACT OF PASSENGER RAIL IN INDIANA

The importance of passenger rail to Indiana is described in this section, covering the following issues:

- Congestion Mitigation
- Safety
- Trade and Economic Development
- Energy Use and Air Quality
- Land Use and Community Impacts

### 2.7.1 Congestion Mitigation

Commuter rail can reduce congestion, particularly since it removes peak-period auto trips. A report for NICTD estimates that the South Shore Line removed 253,800 from northwest Indiana's roadways each weekday in 2014.<sup>42</sup> The report estimates that NICTD carries approximately 9 percent of all Lake County-to-Chicago commuters (7.8 percent of peak-hour VMT), and 12 percent of Porter County-to-Chicago commuters (3.7 percent of peak-hour VMT). Without NICTD, additional roadway capacity would be required to provide the same level of service.

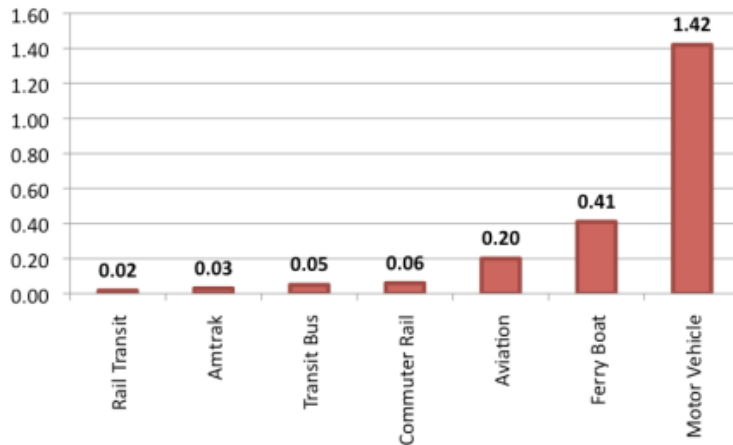
<sup>41</sup> Federal Transit Administration's National Transit Database. Calculated as: (Operating Expenses – Fare and other Direct Revenues) / Annual Unlinked Trips

<sup>42</sup> West Lake Corridor and South Shore Line Strategic Planning Investments: A Regional Benefits Analysis, Revised January 27, 2014.

## 2.7.2 Safety

Both intercity passenger and commuter rail are safer modes per person-mile traveled than driving a car. Figure 2.23 shows that both Amtrak and commuter rail are many times safer for passengers than auto travel.

Figure 2.23. Passenger Fatality Rates per 100 Million Passenger-Miles



Source: 2009 Rail Safety Statistics Report, Federal Transit Administration

The statistics in Figure 2.23 apply only to passengers, whereas most fatalities associated with passenger rail are not passengers, but motorists and pedestrians struck at rail-highway at-grade crossings or pedestrians struck while trespassing on railroad property. According to the U.S. Bureau of Transportation Statistics, total passenger rail miles (including commuter and intercity passenger service) in 2014 was about 18.3 billion.<sup>43</sup> According to the FRA, 216 fatalities were associated with passenger rail operations the same year.<sup>44</sup> The findings suggest that the overall rate of fatalities associated with passenger rail operations in 2014 was about 1.18 fatalities per 100 million passenger-miles, better than the 1.42 fatalities per 100 million passenger-miles associated with automobile travel (Figure 2.23).

## 2.7.3 Trade and Economic Development

Amtrak employs 731 Indiana residents with over \$52 million in wages. Amtrak's Beech Grove facility just southeast of Indianapolis employs 550 and is Amtrak's principal heavy maintenance facility. The Indianapolis Distribution Center is Amtrak's largest material and supply facility, employing 30 full- and part-time employees. According to the FTA's National Transit Database, NICTD employs 345, although it is unknown how many of these are Indiana residents.

<sup>43</sup>[http://www.rita.dot.gov/bts/sites/rita.dot.gov/bts/files/publications/national\\_transportation\\_statistics/html/table\\_01\\_4\\_0.html](http://www.rita.dot.gov/bts/sites/rita.dot.gov/bts/files/publications/national_transportation_statistics/html/table_01_4_0.html)

<sup>44</sup> <http://safetydata.fra.dot.gov/OfficeofSafety/publicsite/Query/TenYearFreightPassengerOperationsOverview.aspx>

Intercity and commuter rail affect economic development in several ways:

- **Tying communities and transportation links closer together.** By establishing additional transportation links, commuter and intercity passenger rail services can enable residents of one area to better access jobs, business, transportation links, and entertainment opportunities in another area. For example, links between Indiana and Chicago enable people in Indiana to better access businesses in Chicago. A 2014 study<sup>45</sup> for NICTD, noted that on average, jobs in Cook County, IL, carry a 40 percent wage premium compared to similar jobs in northwest Indiana. Through NICTD commuters, these extra wages are brought back to Indiana, and are spent on homes, autos, other durable goods, entertainment and other services. The flow of funds to Indiana brought by NICTD commuters was estimated to be \$237.5 million in 2012.<sup>46</sup> In another study by OrthoWorx, an orthopedics manufacturer,<sup>47</sup> orthopedics industry employees indicated that by improving connections to Chicago airports, training opportunities in Chicago, and other areas, an intercity passenger rail corridor would improve the competitiveness of the orthopedics industry in Warsaw. The improved transportation connections would make Warsaw a more desirable place to work and help with recruiting.
- **Improving productivity.** During times of high congestion, commuter and passenger rail services can result in travel time savings, thus increasing time available for other activities, such as working. Also, one cannot work while driving an automobile, but for passengers with certain types of jobs, time spent on a train can be used productively working at a computer, reading, or communicating by phone.
- **Creating opportunities for station-area development.** Railroad stations can serve as a nucleus for development. Historic stations can become multiuse facilities, serving as multimodal hubs or include commercial development. NICTD's *20 Year Strategic Business Plan* notes that TOD is primarily driven by local governments but does mention the possibility of TOD for NICTD stations. In the OrthoWorx study mentioned above, orthopedics industry executives felt that a high-speed rail line in Warsaw could provide the impetus to develop a major hotel-conference facility in Warsaw. In 2016, improvements were made to the rail station located in Lafayette, benefiting the local community and Purdue University, and part of a larger economic redevelopment effort in downtown Lafayette.

#### 2.7.4 Environmental: Energy Use and Air Quality

Passenger rail is energy efficient when compared to competing automobile travel, and therefore produces fewer greenhouses gases. The exact figures depend on the number of passengers on the train and the number of occupants per auto. The 2016 *Transportation Energy Data Book*<sup>48</sup> shows that

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<sup>45</sup> NICTD *Benefits of West Lake Extension Final Report* 2014.

<sup>46</sup> Note that the \$237.5 million is total wages brought into Indiana. The portion due to the Cook County wage premium is estimated to be \$58.7 million.

<sup>47</sup> Parsons Brinckerhoff, *Economic Impacts of Midwest High Speed Rail on the Orthopedics Industry of Warsaw, Indiana*, 2011.

<sup>48</sup> *Transportation Energy Data Book: Edition 35*, October 2016. Published by the Oak Ridge National Laboratory for the U.S. Department of Energy.

Amtrak used an average of 2,186 British thermal units (Btu) per passenger-mile and commuter rail used 2,708 Btu in 2014. In comparison, cars average 3,122 Btu, while air travel averages 2,369 Btu.

A separate study by the National Cooperative Rail Research Program<sup>49</sup> sought to improve upon previous comparisons by considering additional factors such as the following:

- Use of electrified and diesel-electric operations
- Seasonal and daily variations in load factors
- Energy consumed by on-board services such as meal and lounge cars
- Increasing operating speed and higher-speed rail corridors
- Multimodal-nature of door-to-door passenger rail trips

The study developed a simulation tool to investigate various scenarios. The study found that automobile travel with one occupant is three to four times less efficient than rail travel. An automobile with four passengers approaches the energy performance of regional intercity trains but not commuter trains under average load factors. During peak time periods when roadways are at higher congestion and trains operate at higher load factors, commuter travel can be 10 times more fuel efficient than single-occupancy vehicles. Air travel can generate up to six or seven times more greenhouse gas per passenger-mile, even when passenger rail uses relatively clean energy. At average load factors, intercity buses can be more energy efficient than intercity passenger rail, although this is in part because buses offer few amenities on board with denser seating relative to rail, and bus efficiency declines in congested urban areas.

As discussed in the following section, the presence of commuter rail often affects land uses in a way that reduces overall VMT. Commuter rail can spur the development of more walkable mixed-use neighborhoods around stations, allowing residents and workers to meet more of their trip needs on foot. While not quantified here, this constitutes another benefit in terms of energy and greenhouse gas emissions.

Commuter rail stations provide TOD opportunities. Transit-oriented, mixed-use development in station areas has proven in many areas to enhance ridership and create dense, walkable neighborhoods.

There are a significant number of positive quality-of-life improvements that TOD can encourage:

- Reduction of overall environmental impacts as more trips are made on foot, bicycle, or transit, thereby reducing auto vehicle-miles
- Reduced need for land devoted to parking
- Growth in local property tax revenues due to denser, higher-value development
- Facilitates a community's ability to retain and attract businesses and residents
  - Promotes walkable neighborhoods, which tend to be more lively and more attractive to new residents

<sup>49</sup> National Academies of Sciences, Engineering, and Medicine. 2015. *Comparison of Passenger Rail Energy Consumption with Competing Modes*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/22083>

- Improves access to work for residents living near stations
- Provides access to a wider labor pool for employers located near stations
- Provides access to walk-by customers for retail and commercial uses near stations, increasing sales

### **2.7.5 Land Use and Community Impacts**

If improperly planned, rail can generate land use conflicts associated with blocked crossings, noise and other impacts. In the past, rail yards and factories that used rail service were often located adjacent to residential areas so that workers could walk to their jobs. In some cases, these rail facilities remain in downtown areas and are not always consistent with downtown redevelopment plans. Some urban areas have considered rail bypass projects that which aim to route freight rail operations away from city centers. The Indianapolis MPO has considered whether all freight traffic that passes through downtown Indianapolis could be rerouted along a belt line that creates a semi-circle to the south of downtown. Rail lines radiating from downtown would then have capacity to provide passenger service. This has not proceeded due to the high estimated cost of the project.

### **2.7.6 Case Study – Indiana Gateway**

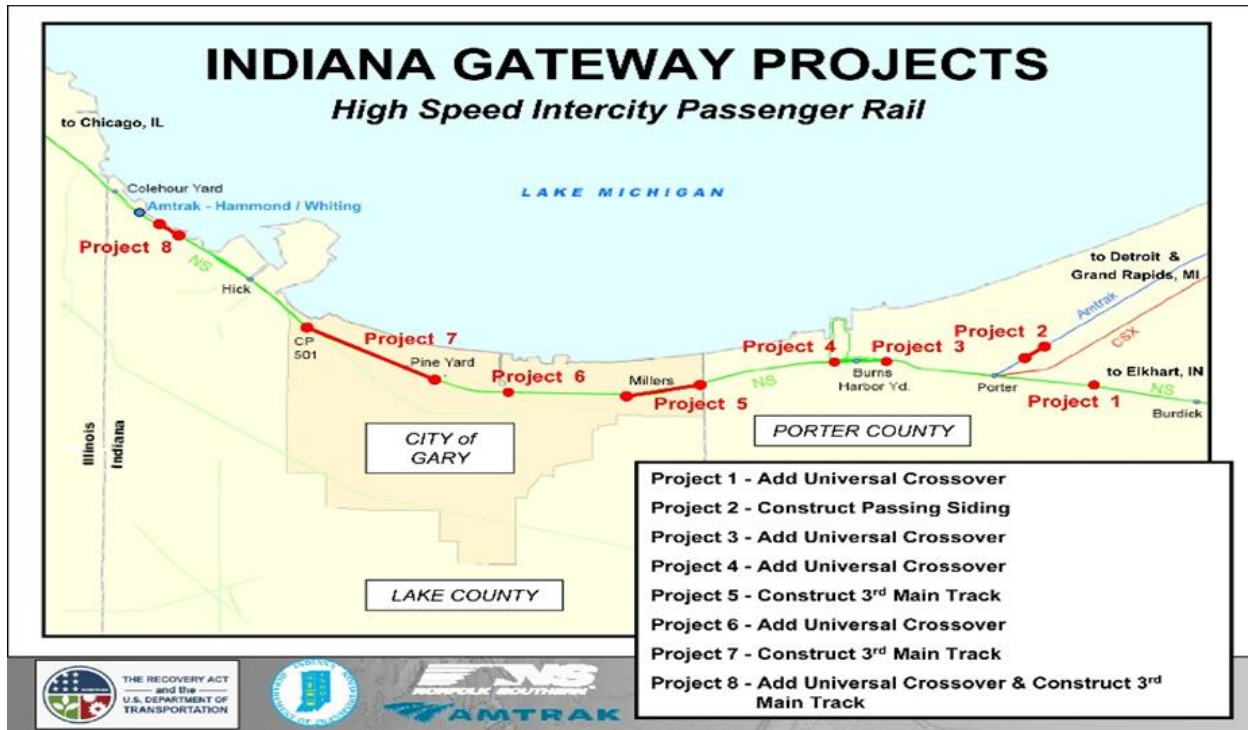
When the FRA solicited applications for projects to improve the speed of passenger rail service, INDOT worked with Amtrak and NS to develop a group of projects that would improve both freight and passenger rail services in northwest Indiana—one of the most delay-prone passenger rail corridors in the nation. These eight projects—collectively called the Indiana Gateway (Figure 2.24)—included new high-speed crossovers, new or upgraded track, extensions and rehabilitation of existing sidings, and new or replaced control points to facilitate the movement of trains through this corridor.

The \$71.4 million Indiana Gateway Project improved two main rail lines between Porter and the Illinois-Indiana state line and increased operational fluidity between Chicago and points east. Its intent is to boost intercity passenger rail reliability, reduce freight and passenger rail system delays, remove freight bottlenecks that affect Amtrak service, and build additional rail capacity in high-growth rail corridors serving northwestern Indiana.

The project construction was completed in March 2017, and therefore it is too early to assess the longer-term benefits. However, reduced travel times make Amtrak more competitive with auto and air travel, likely increasing ridership. And as explained in the previous sections, increased ridership is what makes TOD possible, along with its associated benefits of walkability, development, and increased property values.

In addition, the improved travel times for freight trains have their own set of benefits. As then Governor Mike Pence proclaimed in 2014, “the Indiana Gateway has the potential to grow northwest Indiana’s reputation as a manufacturing and distribution center and positively impact economic development in the region.”

Figure 2.24. Indiana Gateway Projects



Source: INDOT

## 2.8 ONGOING PROJECTS AND PROGRAMS TO IMPROVE SAFETY AND SECURITY

While rail is a relatively safe mode of transportation when compared to highway travel, it is not risk-free. Between 2006 and 2016, 268 deaths in Indiana were associated with the rail system.<sup>50</sup> As shown in Table 2.16, more than half occurred at rail-highway at-grade crossings. The next highest cause of death was people trespassing on railroad property, responsible for 117 deaths during the same time period.

Table 2.16. Rail-Related Fatalities in Indiana

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Rail-Highway Crossings	13	19	20	14	9	10	13	15	11	12	10	146
Trespassers	10	14	7	14	6	13	11	15	9	11	7	117
Other	0	1	1	0	1	0	1	0	0	1	0	5
<b>Total Fatalities</b>	<b>23</b>	<b>34</b>	<b>28</b>	<b>28</b>	<b>16</b>	<b>23</b>	<b>25</b>	<b>30</b>	<b>20</b>	<b>24</b>	<b>17</b>	<b>268</b>

Source: FRA Safety Statistics, INDOT Highway-Rail Grade Crossing Action Plan

### 2.8.1 Crossings

INDOT focuses safety improvement efforts on rail-highway at-grade crossings. In 2016, Indiana contained 7,634 at-grade crossings. As shown in Table 2.17, 75 percent of these are public roadway

<sup>50</sup> By comparison, 8,777 people died on Indiana roadways during the same time period according to statistics from INDOT's 2015 Annual Traffic Safety Report and the 2016 National Safety Council Motor Vehicle Fatality Estimates.



crossings, 25 percent are crossings of private roadways, and one percent are pedestrian crossings. Indiana ranks sixth in the nation for the number of public rail-highway at-grade crossings, just behind Ohio and Pennsylvania. But Indiana is much smaller geographically than other states with a large number of crossings. Measured in terms of the frequency of crossings per public roadway mile, Indiana, along with Illinois, has the most crossings per roadway mile. Within Indiana there is a public rail-highway at-grade crossing for every 17 miles of public roadway. The concentration of crossings is higher in certain parts of the state, such as in northwest Indiana.

*Table 2.17. Public, Private, Pedestrian Crossings in Indiana*

Type	At-Grade Crossings	% of Total
Public	5,693	75%
Private	1,874	25%
Pedestrian	67	<1%
<b>Totals</b>	<b>7,634</b>	<b>100%</b>

Source: INDOT

As shown in Table 2.18, just over one-third of public crossings in Indiana have gates and lights, while over half have either gates and lights or lights only.

*Table 2.18. Warning Devices of Public Crossings in Indiana*

Type	At-Grade Crossings	% of Total
Active — Flashing Lights and Gates	2,116	37.2%
Active — Flashing Lights Only	1,154	20.3%
Other	237	4.2%
Passive — Cross Bucks with stop signs	941	16.5%
Passive — Cross Bucks Only	1,245	21.8%
<b>Totals</b>	<b>5,693</b>	<b>100%</b>

Source: INDOT

The FHWA has estimated that upgrading a crossing from passive warning devices to flashing lights and gates reduces the risk of crashes by 88 percent, while adding flashing lights reduces risk by only 64 percent.<sup>51</sup> Collectively, crossings with gates and/or lights are called “protected” since they are equipped with train-activated warning devices. However, during 2015 over two-thirds of crashes occurred at crossings with active warning devices and over half occurred at gated crossings (Table 2.19). Motorists often ignore the flashing lights or drive around gates that indicate a train is approaching. Crash statistics are higher at crossings with active warning devices not because these are less safe, but because these crossings are the most heavily trafficked by motorists and trains.

In Table 2.19, green or blue indicate lower crash statistics, while red indicates a higher crash statistics. As shown, the rate of accidents at rail-highway at-grade crossings has generally declined. For example, the average annual number of crashes between 1997 and 2006 was 177, while between 2007 and 2016, the average was 120. The percentage of crashes at protected crossings has increased between 1997 and 2016, perhaps because the percentage of crossings that are protected has increased since 1997.

<sup>51</sup> Federal Highway Administration, *Railroad-Highway Grade Crossing Handbook – 5 Selection of Alternatives*, [https://safety.fhwa.dot.gov/hsip/xings/com\\_roaduser/07010/sec05.cfm#d](https://safety.fhwa.dot.gov/hsip/xings/com_roaduser/07010/sec05.cfm#d)

Table 2.19. Crashes at Rail-Highway Grade Crossings in Indiana

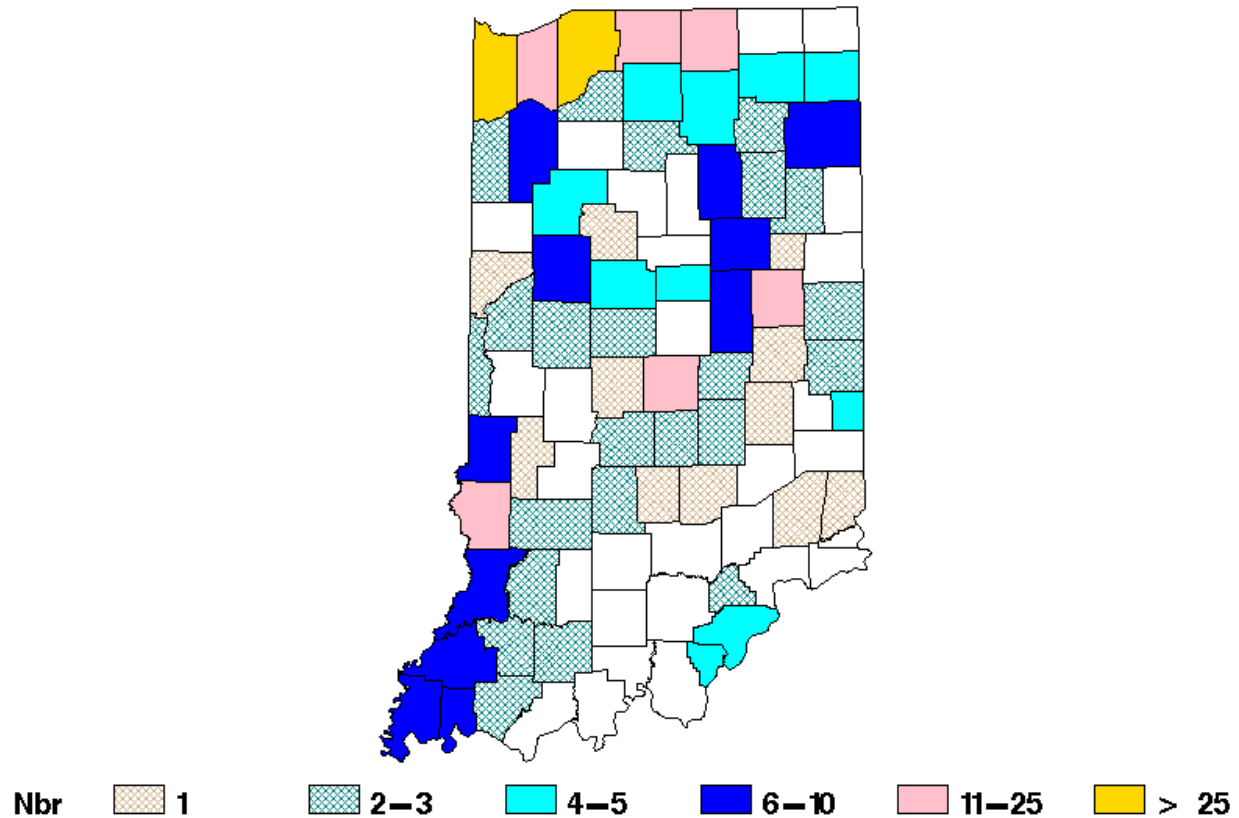
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
All Highway-Rail Crashes	227	194	193	194	165	175	146	159	177	140	164	142	98	113	119	112	93	123	118	116
Public Crossing Crashes	210	176	182	188	153	162	135	151	166	134	148	131	87	109	117	109	86	119	115	106
Private Crossing Crashes	17	18	11	6	12	13	11	8	11	6	16	11	11	4	2	3	7	4	3	10
Injuries	112	80	63	55	62	44	37	37	32	37	48	46	38	42	43	32	36	50	39	36
Deaths	23	25	26	23	19	17	20	26	21	13	19	20	14	9	10	13	15	11	12	10
Public Crossing Crashes w/Active Warning	100	91	102	101	91	98	81	103	115	91	111	94	59	71	79	84	67	86	80	83
Flashing Lights Only	60	51	58	60	44	51	26	33	47	39	39	36	17	19	22	25	15	27	22	15
Gated	40	40	44	41	47	47	55	70	68	52	72	58	42	52	57	57	52	59	58	60
% Public Crossing Crashes w/Active Warning	48%	52%	56%	54%	59%	60%	60%	68%	69%	68%	75%	72%	68%	65%	68%	77%	78%	72%	70%	78%
% at Gated	19%	23%	24%	22%	31%	29%	41%	46%	41%	39%	49%	44%	48%	48%	49%	52%	60%	50%	50%	57%
% at Flashing Light Only	26%	26%	30%	31%	27%	29%	18%	21%	27%	28%	24%	25%	17%	17%	18%	22%	16%	22%	19%	12%
Green or Blue Shading = Lower Crash Statistics, Red = Higher Crash Statistic																				

Source: INDOT Website, FRA Safety Statistics



The highest concentrations of crashes correspond to the areas with the greatest concentration of crossings, namely Lake and LaPorte Counties. Figure 2.25 displays the total number of crashes by county between 2014 and 2016.

*Figure 2.25. Highway-Rail Grade Crossing Crashes by County (2014 – 2016)*



Source: [safetydata.fra.dot.gov](http://safetydata.fra.dot.gov)

The Rail Safety Improvement Act of 2008 required Indiana to create and maintain an action plan considering strategies addressing rail-highway at-grade crossing closures, grade separations, crossings that have experienced multiple crashes, or crossings that have a high calculated crash risk. The Indiana Highway-Rail Grade Crossing Safety Action Plan update approved by the FRA in 2012, and the Section 130 program continues to be an important component of this plan.

There are a number of approaches that INDOT takes to improve safety at crossings:

- Crossing closure
- Grade separation
- Train-activated warning device improvement
- Passive warning device improvement

The safest rail-highway grade crossing is no crossing at all. For that reason, INDOT seeks to curtail construction of new crossings and actively seeks consolidation of crossings where it is feasible and reasonable to do so.

In 2016, Indiana Code 8-6-7.7-3.2 was revised to clarify that railroads may petition local units of government to close crossings. The revision also allows the railroad to appeal the decision by a local unit of government if the government entity denied the railroad's closure request. The railroad is now able to appeal this decision to an Administrative Law judge.

INDOT applies a portion of the state-funded Railroad Grade Crossing Fund to encourage closure of redundant crossings. Communities receive a lump sum upon closing a public rail-highway at-grade crossing, which municipalities may use for any public purpose. INDOT Rail Programs Office staff look for potential crossings to close during ongoing field activities. Staff target crossings whose closures would not affect motorists significantly—for instance, those located close to other crossings with low motor-vehicle usage.

Grade separation eliminates the hazards of rail-highway at-grade crossings while improving the mobility of both rail and highway traffic. However, given that these projects usually cost \$5 million – \$15 million or more, the number of grade separations that can be completed in any given year is very limited. INDOT and local roadway owners advance grade-separation projects at locations where high volumes and/or high speeds of rail and roadway traffic make a grade-crossing project with any type of warning device undesirable.

Train-activated warning device improvements (Figure 2.26) within Indiana are funded primarily through the federal Railway-Highway Crossings (Section 130) Program, under Title 23 U.S. Code Section 130. Funding averages \$7.4 million per year, which funds improvements at 20 –23 locations. Projects can either upgrade from passive to active warning or provide improvements to existing active warning devices.

*Figure 2.26. Typical Section 130 Program Project: New Train-Activated Flashing Lights, Bell, Gates, Overhead Cantilever, Constant Warning Time Circuitry*



Source: INDOT

Passive warning device improvements typically consist of local public agencies providing advanced warning signs and visible pavement markings. Railroads can improve their passive protection by upgrading their crossbuck assemblies to include stop or yield signs, installing retroreflective tape, and providing adequate sight distance for persons approaching the crossing.

The INDOT Rail Programs Office conducts about 1,500 on-site inspections of public rail-highway at-grade crossings each year to verify that the signage and pavement markings, rail and roadway sight views, grade-crossing surface conditions, and inventory updates meet federal and state requirements. When deficiencies are noted, railroads or road authorities are contacted to correct the problems.

The Indiana Operation Lifesaver program seeks to reduce deaths and injuries at rail-highway at-grade crossings and along railroad rights-of-way. This program partners with INDOT and railroads in the state. The program works to fulfill its mission by educating the public and improving driver and pedestrian behavior at rail-highway at-grade crossings.

### **2.8.2 Hazardous Materials**

During the preparation of this Rail Plan, some stakeholders expressed concern over hazardous materials passing through their communities. As the AAR points out, 99.99 percent of hazardous material carloads are moved without a train accident-related release.<sup>52</sup>

New rules have recently been established to reduce the risks of accidents involving hazardous and flammable materials. The new rules determined by the FRA and the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration require the establishment of the Rail Corridor Risk Management System, a routing model that analyzes and determines the safest and most secure route for transporting toxic-by-inhalation materials and crude oil. New tank car standards require tank cars that are better able to withstand accidents. The North Dakota Industrial Commission established rules requiring natural gas liquids to be removed from crude oil shipments prior to being shipped by rail. The intent is to make the crude oil being shipped less volatile and reduce the fire risk if a tank car carrying crude oil is punctured. Because North Dakota has been the origin of a significant portion of crude-by-rail shipped in the United States, the North Dakota Industrial Commission rule could improve safety.

The railroad industry has implemented measures to help first responders in the event of a rail accident involving hazardous materials. The industry has sponsored training workshops for first responders and has developed software applications that allow first responders to identify commodities shipped in specific railcars.

Within Indiana, Local Emergency Planning Committees are tasked with providing information about hazardous chemicals traveling through communities, coordinating hazardous material planning and preparedness, and developing hazardous material emergency response plans. Among the emergencies that these organizations plan and prepare for are hazardous material incidents involving rail.

## **2.9 THE STATE'S EXISTING RAIL SYSTEM: TRENDS AND FORECASTS**

### **2.9.1 Demographic and Economic Growth Factors**

The growth in demand for freight and passenger rail services in Indiana will be driven by trends in economic and demographic factors, including gross state product, income, population, employment,

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<sup>52</sup> <https://www.aar.org/Pages/Railroads-Deliver-Hazardous-Materials-Safely.aspx>



and the performance of freight-reliant industries. Manufacturing—one of the leading industries in the state—requires an extensive and reliable rail network to move goods in a timely and cost-efficient manner, as do the mining and agriculture sectors.

### GROSS STATE PRODUCT

Indiana's real gross state product (GSP)—a measure of overall economic activity within the state—increased from \$252 billion (2009\$) in 2000 to \$299 billion (2009\$) in 2015.<sup>53</sup> That growth represents an 18.6 percent increase, or an average compound annual growth rate of approximately 1.2 percent during this period, compared to the U.S. average of 1.8 percent.

The state has historically relied on manufacturing; Indiana is one of the largest automobile, automobile parts, and pharmaceutical producers in the country. From 2000 to 2015, as the manufacturing sector grew at a much slower pace than service industries like information and finance, the state struggled to keep up with the nationwide pace of economic growth. Manufacturing makes up close to 30 percent of Indiana's real GSP, compared to 12 percent in the United States. Manufacturing's share of GSP has actually increased from 25 percent in 1997, despite lower employment in the industry, due to the increase in specialized manufacturing. Output from the automobile and automobile parts manufacturing industry, which makes up 20 percent of manufacturing output in the state today, has increased 140 percent in real terms since 1997, compared to 58 percent growth from manufacturing as a whole. In addition, real GSP from chemical-products manufacturing (primarily pharmaceuticals), which comprises 28 percent of total manufacturing output, has doubled in the same time span.<sup>54</sup>

In 2014, Conexus Indiana—a private-sector initiative focused on manufacturing and logistics—gave the state an A grade in manufacturing-industry health based on three variables: the share of total income in the state earned by manufacturing employees, the wage premium paid to Indiana's manufacturing workers relative to those in other states, and the share of manufacturing employment per capita.<sup>55</sup> The state also received an A grade in logistics-industry health, suggesting the state has a strong capacity to move and distribute goods. Strong growth in certain segments of the manufacturing sector will drive demand for further improvements to freight rail.

Mining and farming are much smaller shares of the Indiana economy, but produce and consume commodities for which rail transportation is important. In 2015, mining was about 0.5 percent of the state's GSP. The growth of the sector has been flat since 1997. In 2014 (the most recent year for which data is available), agriculture was about 1.1 percent of the Indiana economy, but has nearly doubled since 1997, growing at 4 percent per year.

### INCOME

In 2015, Indiana's per capita personal income (PCPI) was \$41,940—13 percent lower than the U.S. average of \$48,112.<sup>56</sup> The 2015 PCPI reflected a 3.2 percent increase from 2014, compared to the

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<sup>53</sup> U.S. Bureau of Economic Analysis, *Real GDP by State (Chained 2009\$)*

<sup>54</sup> Ibid.

<sup>55</sup> Conexus Indiana, *Manufacturing and Logistics Report, 2014*

<sup>56</sup> U.S. Bureau of Economic Analysis, *Personal Income Summary*

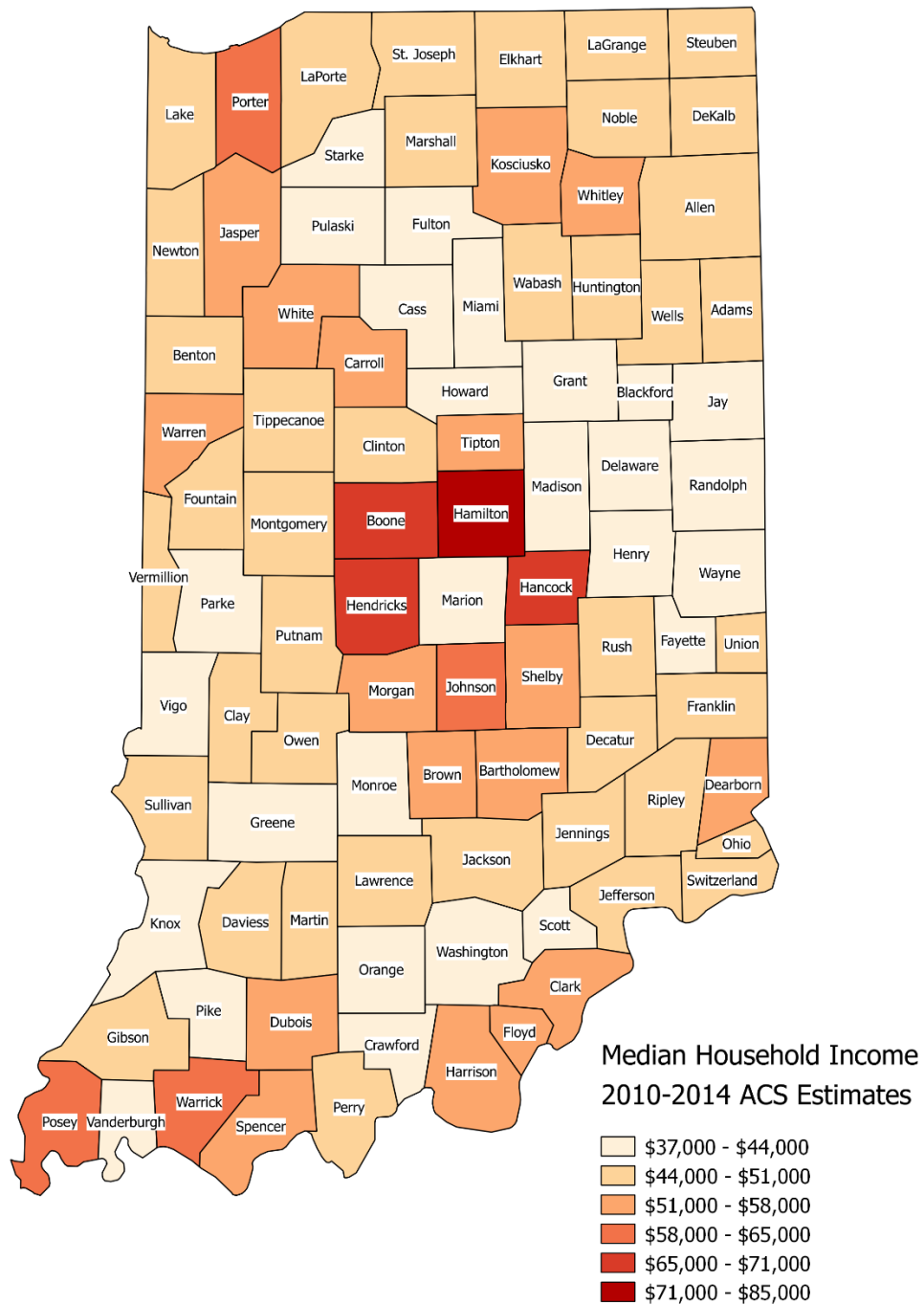
3.7-percent national average. Looking at longer-term historical trends, Indiana's PCPI has increased 49 percent from 2000, compared to 57 percent for the entire nation.

Among Indiana's counties, Hamilton County has the highest median household income (\$84,635) in 2014—compared to the state (\$48,433)—with Hendricks (\$68,342), Boone (\$67,416), and Hancock (\$65,517) Counties following just behind.<sup>57</sup> The top-earning counties are located in the greater Indianapolis area, reflecting the city's presence as the economic center of the state. Marion County, which encompasses the Indianapolis downtown, has a lower median income of \$42,378. Figure 2.27 displays ranges of median household incomes by county.

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<sup>57</sup> U.S. Census Bureau, 2015 American Survey 1-Year Estimates, *Median Income in the Past 12 Months (In 2015 \$)*

**Figure 2.27 Median Household Income (2014)**



Source: U.S. Census Bureau, American Community Survey Five-Year Estimates (2010-2014)

## POPULATION

According to U.S. Census Bureau data, Indiana's state population grew 6.6 percent between 2000 and 2010, from 6,080,424 to 6,483,802 people; this rate was below the national average of 9.7 percent during this period.<sup>58</sup> However, Indiana was one of the fastest growing states by population in the Midwest region, which saw overall population growth of 3.9 percent during this period.<sup>59</sup> The 2011–2015 ACS five-year estimates peg the state's population at 6,619,680, indicating that population growth has continued since 2010.

The Indiana Statewide Travel Demand Model (ISTDM) forecasts modest population growth for the state over the coming decades. The ISTDM projects population to increase to 7,101,055 by 2025 and 7,516,292 by 2035, representing growth rates of 0.60 percent and 0.59 percent, respectively, in terms of average annual compound growth from 2015.<sup>60 61</sup>

While the state as a whole has seen steady, if slow, population growth over the 2000s, some areas have seen explosive growth. The fastest growing regions in the state are suburbs and exurbs of the city of Indianapolis. Hamilton County, located just north of Indianapolis, saw population growth of 50 percent from 2000 to 2010—over seven times greater than the state as a whole.<sup>62</sup> Hendricks and Hancock Counties, also in the greater Indianapolis area, saw growth of 40 percent and 25 percent, respectively, during this period. Figure 2.28 displays population growth by county. As described earlier, these three counties also have the highest median household incomes in the state. According to STATS Indiana, projected population growth between 2010 and 2030 will take place primarily in Hamilton County (59 percent), Hendricks County (49 percent), Hancock County (32 percent), Boone County (32 percent), and Johnson County (27 percent).<sup>63</sup> Figure 2.29 displays projected population growth by county.

<sup>58</sup> U.S. Census Bureau, American Fact Finder, *Total Population*

<sup>59</sup> U.S. Census Bureau, *Population Distribution and Change: 2000-2010*

<sup>60</sup> Indiana Department of Transportation, *Indiana Statewide Travel Demand Model*, January 2010

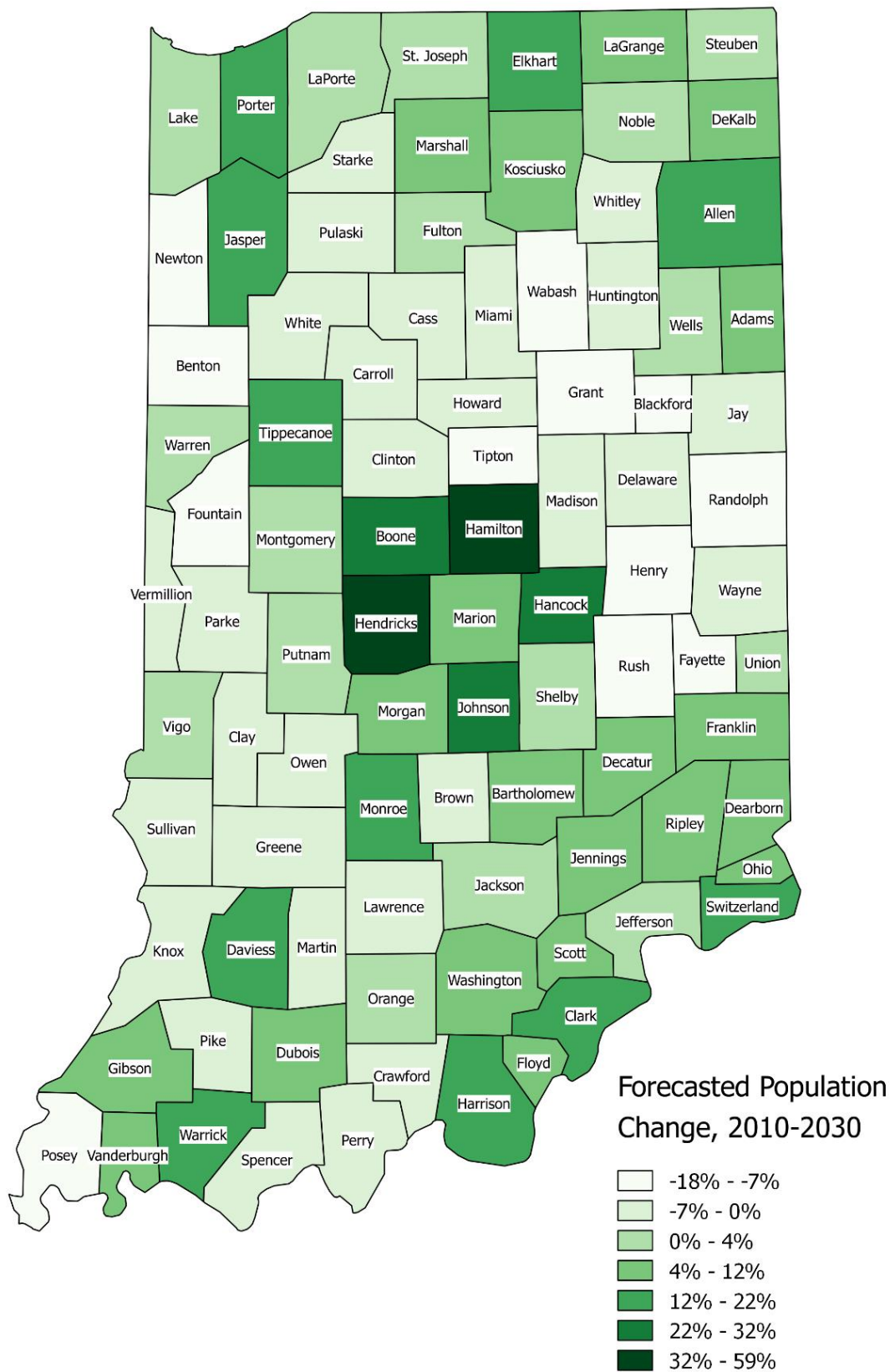
<sup>61</sup> A review of planning documents for several metropolitan planning organizations (MPO) representing the largest metropolitan areas in Indiana suggests that these organizations similarly rely on U.S. Census Bureau data to characterize baseline population levels for their forecasts models. Sources used in this State Rail Plan are therefore considered consistent with MPO planning efforts. The usage of population forecasts from the ISTDM was considered appropriate, since the ISTDM is a key planning tool for Indiana statewide planning.

<sup>62</sup> U.S. Census Bureau, American Fact Finder, *Total Population*

<sup>63</sup> STATS Indiana, *Population Projections: By Age and Sex for Indiana Counties and Regions, 2010-2050*



Figure 2.29. Population Growth by County (projected 2010–2030)



Source: STATS Indiana, 2017



## EMPLOYMENT

According to the U.S. Bureau of Labor Statistics, total nonfarm employment has surpassed its pre-recession peak in the state and stands at 3.1 million as of August 2016, 9 percent higher than its recession low.<sup>64</sup> However, the total nonfarm employment level is about the same as it was in 2000, suggesting that GSP growth during this period was generated by gains in productivity, rather than from a substantial expansion in employment.

Indiana's most prominent economic sectors, as measured by share of total employment, are manufacturing and trade, transportation, and utilities; these contribute to demand for freight rail. The latter categories employed 20 percent of the state's workers (600,000 employees) as of August 2016, a 2.6 percent jump from the previous year. The manufacturing sector employs 515,000 workers—substantially lower than the peak of 665,000 at the turn of the century, but a vast improvement from the recession low of 425,000. While manufacturing employment throughout the country has been trending downward since 2000, it remains key to the economic well-being of Indiana's citizens, since it employs over 15 percent of its population. Education and health services, the fourth largest sector, has seen strong 4 percent year-over-year employment growth to 472,000 jobs.

Employment has dropped most dramatically in the mining and logging industry, falling over 10 percent from August 2015 to August 2016. However, mining and logging make up less than 0.25 percent of total employment in the state.

ISTDM forecasts employment in Indiana to grow from 3.72 million in 2006 (its base year) to 3.99 million in 2020 and 4.41 million in 2035 in the medium-growth scenario, representing 0.49 percent and 0.58 percent average annual compound growth from 2006 to the respective forecast years. Using these average annual compound growth rates to project the August 2016 Bureau of Labor Statistics' estimate of 3.08 million for nonfarm employment, Indiana can expect 3.14 million jobs in 2020 and 3.43 million jobs in 2035.

### 2.9.2 Freight Demand and Growth

Indiana occupies an important location within the U.S. rail network. Rail freight moving between East Coast markets and Midwest connections such as Chicago flow over the Indiana rail network. Important north-south corridors also cross the state, linking the Midwest to the Southeast. As shown in Table 2.20, over 70 percent of rail freight handled by the Indiana rail network passes between origins and destinations outside of the state (overhead). In addition, Indiana is one of the largest states for originating and terminating rail tonnage in the nation. Indiana generates more rail freight than it consumes, delivering about 2 million more tons per year to other states (outbound) than it receives (inbound). Although less freight passes between origins/destinations within the state than move out of state, almost 24 million tons move intrastate. Most of these intrastate moves consist of coal shipments from Indiana mines to power plants or other industrial users.

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<sup>64</sup> Bureau of Labor Statistics, *Economy at a Glance*

Table 2.20. Rail Tonnage by Direction (2014)

Direction	Tons	Percentage of Total
Inbound	35,341,733	11%
Outbound	37,327,821	11%
Intrastate	23,512,392	7%
Overhead	235,075,760	71%
<b>Grand Total</b>	<b>331,257,706</b>	<b>100%</b>

Source: 2014 Surface Transportation Board Carload Waybill Sample

**COMMODITIES THAT ORIGINATE OR TERMINATE IN INDIANA**

As shown in Table 2.21, coal is the largest commodity to both originate (includes both outbound and intrastate shipments) and terminate (includes both inbound and intrastate shipments) in Indiana, followed by primary metal products.

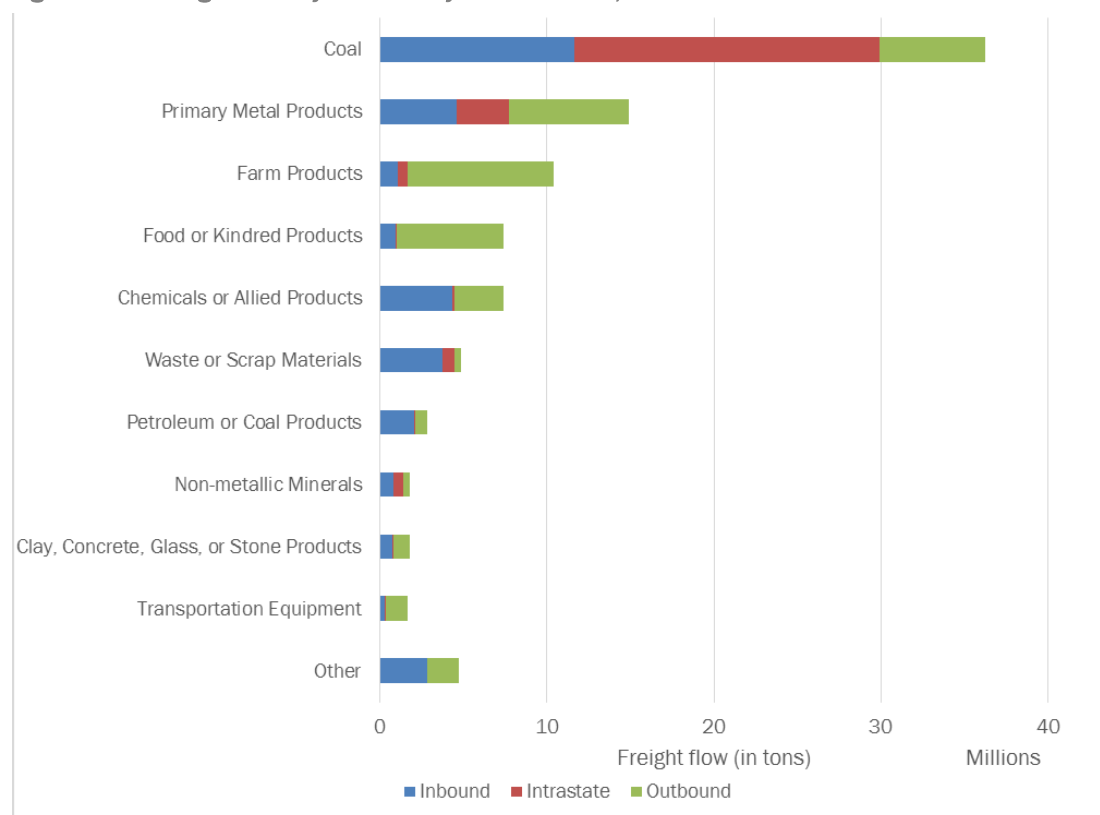
Table 2.21. Top Commodities Originating or Terminating in Indiana (2014 Tons)

Commodity	Originating	Percent	Commodity	Terminating	Percent
Coal	24,588,128	40%	Coal	31,824,910	54%
Primary Metal Products	10,276,323	17%	Primary Metal Products	7,714,450	13%
Farm Products	9,328,542	15%	Chemicals or Allied Products	4,512,396	8%
Food or Kindred Products	6,478,527	11%	Waste or Scrap Materials	4,467,556	8%
Chemicals or Allied Products	3,092,842	5%	Petroleum or Coal Products	2,102,349	4%
Transportation Equipment	1,371,216	2%	Farm Products	1,679,004	3%
Waste or Scrap Materials	1,108,672	2%	Non-metallic Minerals	1,378,980	2%
Clay, Concrete, Glass, or Stone Products	988,664	2%	Food or Kindred Products	1,038,960	2%
Non-metallic Minerals	956,344	2%	Clay, Concrete, Glass, or Stone Products	946,432	2%
Petroleum or Coal Products	770,658	1%	Metallic Ores	734,196	1%
Other	1,880,297	3%	Other	2,454,892	4%
<b>Grand Total</b>	<b>60,840,213</b>	<b>100%</b>	<b>Grand Total</b>	<b>58,854,125</b>	<b>100%</b>

Source: 2014 Surface Transportation Board Carload Waybill Sample

Figure 2.30 displays rail shipments by commodity and whether they are shipped to/from Indiana, from/to other states or move within the state. As shown, coal is shipped by rail within, to, and from Indiana as are metal and chemical shipments. Indiana ships more agriculture and food products to other states than it receives, but receives more waste products, petroleum/coal products than it ships.

Figure 2.30. Freight Flow by Commodity and Direction, 2014 Tons



Source: 2014 Surface Transportation Board Carload Waybill Sample

### INDIANA RAIL FLOWS BY COUNTY

The largest rail volumes that originate and terminate in Indiana are in the northwest and southwest portions of the state, with Lake, Sullivan, Gibson and Warrick Counties having the highest originating rail volume, and Lake, Porter, Jasper, Gibson, and Warrick Counties having the highest terminating rail volume. Coal accounts for most of the tonnage originating or terminating in most of these counties, although steel is the largest commodity to originate from Lake County. (Appendix A, Figure A.3 and Figure A.4 show the originating and terminating county flows.)

### TOP INDIANA RAIL COMMODITIES

The following section provides details regarding the flows of several top commodities shipped by rail to and from Indiana, the specific nature of the commodities shipped, top origins and destinations, and outlook for rail shipments in the future.

#### COAL

Coal is a major product shipped by rail both to and from Indiana. Most coal shipped from Indiana originates in the coal-producing counties of southwest Indiana. Of the coal originating by rail in Indiana, 74 percent is shipped to other locations in the state, primarily in the southwest and northwest areas of the state. Florida, Alabama, and Georgia receive 24 percent of Indiana's rail shipments of coal. (Appendix A, Figure A.5 and Figure A.6 display the counties that originate and terminate coal in Indiana.)

The top states that ship coal to Indiana are Illinois and West Virginia. Some of the Illinois coal probably has western origins that appear to originate in Chicago. Because the STB Waybill Sample sometimes displays multiple records for rail moves that are transferred between railroads, most of the Chicago-originated traffic likely represents the eastern portions of rail moves that originated further to the west. Coal is consumed in counties with coal-fired power plants or other industrial consumers. These tend to cluster either near coal sources, such as southwestern Indiana or near population centers.

Volumes of coal deliveries terminating in Indiana by rail have decreased in recent years, while the volume of coal originating has increased. Nationwide, coal production has fallen, caused by a number of factors:

- Improved technologies for natural gas recovery, known as hydraulic fracturing, have reduced the cost of natural gas relative to coal. This has caused some electric generation previously fueled by coal to shift to natural gas.
- New regulations have increased the cost of generating electricity by coal:
  - New National Ambient Air Quality Standards for ozone and particulate matter
  - The Cross-State Air Pollution Rule to address interstate transport of air pollution
  - Mercury and Air Toxics Standards (MATS)
  - Regional haze regulations
- In 2015, the U.S. EPA put forward the Clean Power Plan (CPP) by which states are required to reduce emissions produced by power plants. Because coal produces more carbon dioxide than other fuels used to generate electricity, implementation of the CPP would shift power generation to other fuels. In 2016, the U.S. Supreme Court stayed implementation of the CPP. If the CPP were to be implemented, it would significantly reduce consumption and therefore reduce rail deliveries of coal nationwide.

These factors are expected to continue to reduce coal consumption in Indiana. But paradoxically, some factors that reduce coal demand nationwide increase demand for Indiana coal, as well as other producing areas of the Illinois Basin. For example, a new mine that opened in 2010 in Sullivan County sold 8.2 million tons of coal in 2013.<sup>65</sup> Several factors have driven increased demand for Indiana coal.

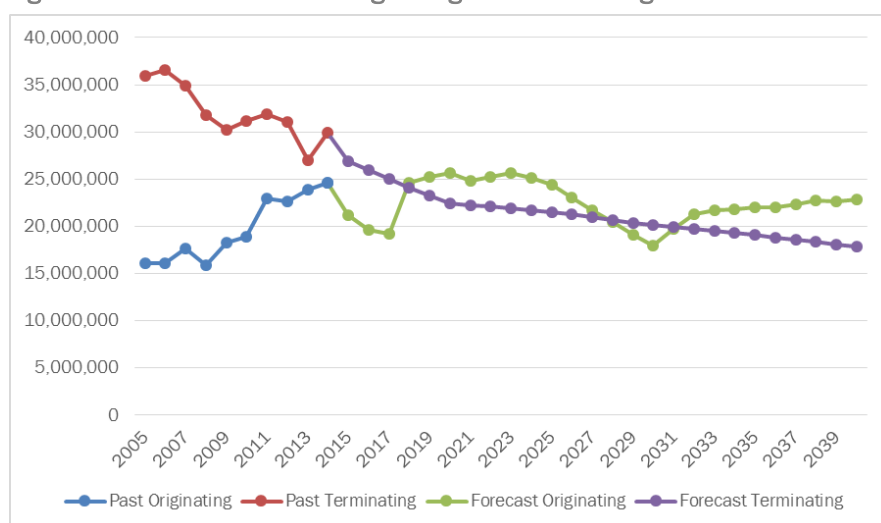
- Indiana coal has a high heat content and is mined close to consumption areas, thus lowering delivery costs when compared to other source such as western subbituminous coal.
- Coal mined in Indiana has relatively high sulfur content. To burn Indiana coal, power plants must install scrubbers to remove most of the sulfur. More power plants are installing scrubbers, a trend that is in part driven by more stringent environmental regulations. For example, the MATS regulations mentioned above have the potential to require power plants to install the same scrubbers used to remove sulfur whether they burn high-sulfur coal or not. If the delivered cost of high-sulfur coal is less than that of low-sulfur coal and plants must install scrubbers anyway, power plants have an incentive to burn high-sulfur coal.

<sup>65</sup> Bear Run Mine according to Peabody Energy website.

- Indiana coal mines use a technology called longwall mining, which is an automated form of underground mining and does not require the building of permanent supports for the mined area. Improvements in this technology have reduced the relative cost of operating these mines compared to other forms of mining.

Given the contradictory national trends that reduce nationwide coal production but favor Indiana coal, it is forecasted that coal traffic originating in Indiana will grow, albeit slowly, through 2040. Figure 2.31 shows past trends and forecast freight rail volumes of coal for Indiana. The forecast for originating coal is based on the U.S. Energy Information Administration forecast for production of Eastern Interior (includes Indiana) coal, while the terminating forecast is based on projections of Indiana terminating rail shipments by the FHWA Freight Analysis Framework-4 (FAF-4).

**Figure 2.31. Past and Future Originating and Terminating Indiana Rail Coal Traffic (by Tons)**



Sources: 2014 Surface Transportation Board Carload Waybill Sample, Association of American Railroads, Energy Information Administration forecast, FHWA Freight Analysis Framework-4 forecast

## METAL

Metal is a major product shipped both to and from Indiana by rail. Steel is the primary type of metal freight originating and terminating in Indiana, with the vast majority of production in northwest Indiana. Of the total originating metal freight, 30 percent is shipped intrastate, with destinations along the northern and southern borders of Indiana.

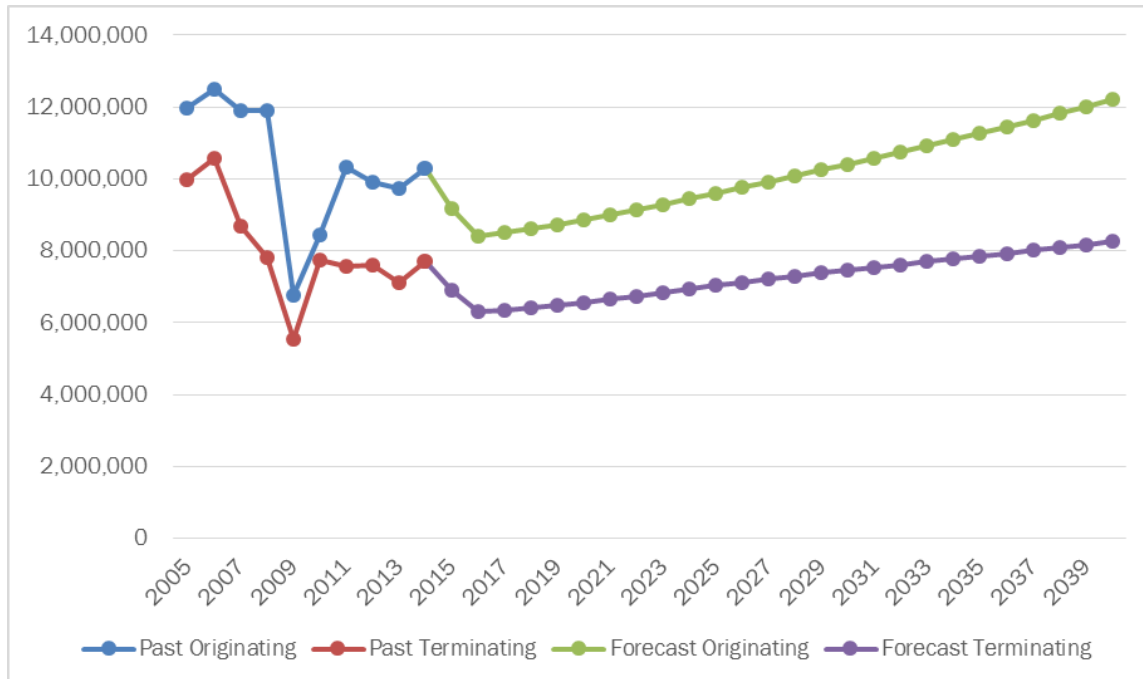
Indiana's steel mills differ in technology and the required inputs. Concentrated in northwest Indiana are five integrated steel mills. The primary raw materials for these mills are iron ore, iron and steel scrap, limestone, and metallurgical coal (coke). Also in northwest Indiana and elsewhere in the state are minimills, which use iron and steel scrap, rather than iron ore as feedstock. The scrap is melted in electric furnaces.

The top recipient of Indiana iron and steel products shipped by rail is Ohio. Other big recipients are Michigan, Pennsylvania, Texas, Kentucky, Louisiana, and West Virginia. Consumption of metal delivered by rail is concentrated along the northern and southern borders of the state. This intrastate freight accounts for approximately 40 percent of metal terminating by rail within Indiana. Ohio is the

top producer of metal products shipped via rail to Indiana. (Appendix A, Figure A.7 and Figure A.8 display counties in Indiana that originate and terminate metal products.)

Originating and terminating rail steel shipments declined during the recession of 2007 – 2009. Volumes recovered slightly through 2014. According to the World Steel Association, U.S. steel production further dropped in 2015 and 2016. This was likely caused by a global glut of steel that occurred during these years. Demand in developing countries declined, while production, particularly in China, remained high. In the long-term, the FHWA FAF-4 forecasts slowly increasing volumes of steel shipped to and from Indiana. Figure 2.32 shows past and future rail steel shipments.

Figure 2.32. Past and Future Originating and Terminating Indiana Rail Primary Metal Traffic by Tons



Sources: 2014 Surface Transportation Board Carload Waybill Sample, Association of American Railroads, World Steel Association, FHWA Freight Analysis Framework-4

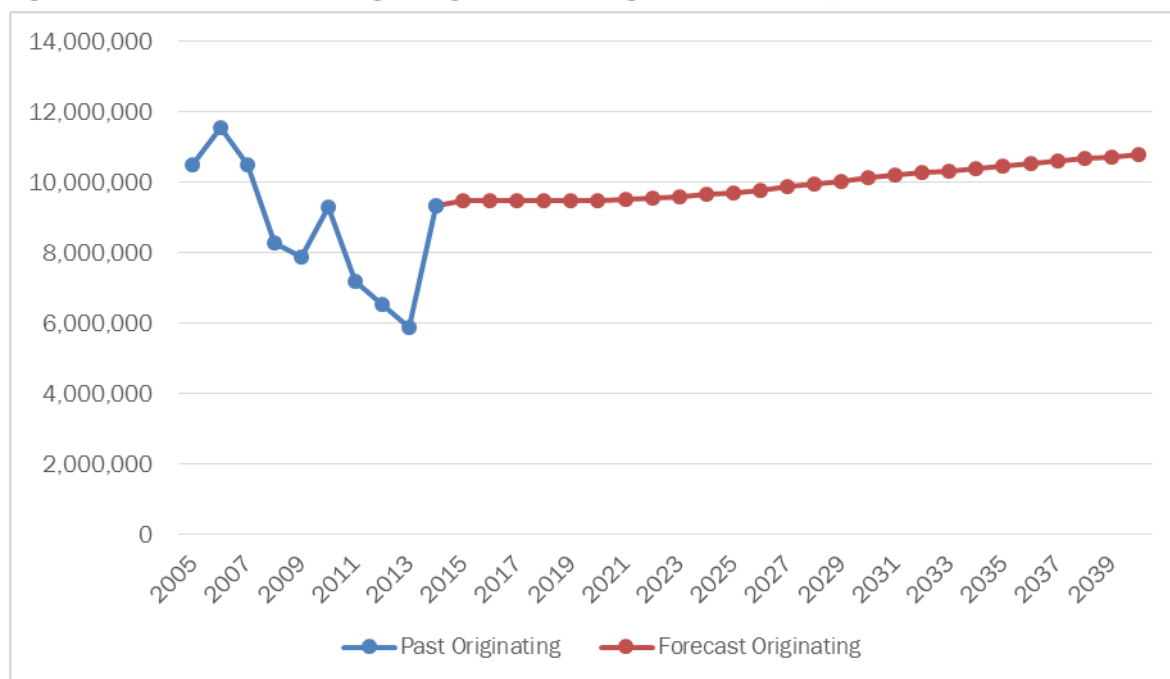
## AGRICULTURE

Indiana agriculture generates significant outbound rail traffic. Corn (accounting for 78 percent of all agriculture rail shipments) and soybean (accounting for 19 percent of all agriculture rail shipments) are the two major types of agricultural crops that originate from Indiana by rail. The remaining 3 percent consist of grains such as wheat and rye. Shipments primarily originate from the northern and western portions of the state. Georgia receives the largest percentage of Indiana agricultural rail shipments, accounting for 32 percent of the total. Other major recipients are Tennessee, Alabama, and Illinois. Only 6.5 percent of Indiana's agricultural shipments are intrastate, with destinations concentrated in Indianapolis and Kosciusko County. (Appendix A, Figure A.9, indicates the counties where agricultural products originate by rail.)

Agricultural product rail shipments declined significantly from 2005 through 2012 but then somewhat recovered in 2014. FHWA FAF-4 forecasts estimate that Indiana agriculture will grow slowly through 2040 (Figure 2.33).



Figure 2.33. Past and Future Originating Indiana Rail Agriculture Traffic by Tons



Sources: 2014 Surface Transportation Board Carload Waybill Sample, Association of American Railroads, FHWA Freight Analysis Framework-4

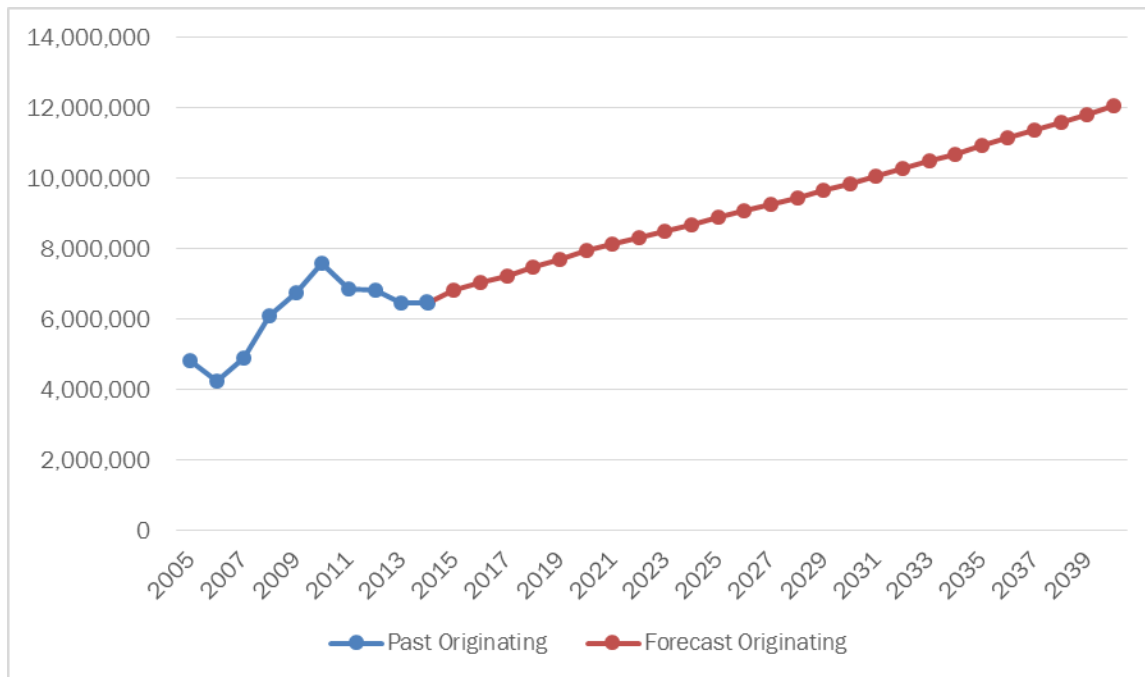
### Food

Food is a major commodity category to originate by rail from Indiana. Much of the tonnage originating by rail from Indiana is soybean oil, accounting for 60 percent of the total. Wet corn milling products (such as corn syrup, corn starch, and corn sugar) and liquors are two other important products shipped by rail.

Production is dispersed throughout the central and north-central part of the state, with major production in Tippecanoe, Kosciusko, and Shelby Counties. Georgia and North Carolina receive the largest percentages, which together account for 44 percent of Indiana food shipments by rail. Minimal amounts of food products are shipped by rail intrastate (1.4 percent). (Appendix A, Figure A.10, shows the counties that originate food products by rail.)

Food product rail shipments grew significantly from 2006 through 2011 but declined slightly and then stabilized from 2012 through 2014. FHWA FAF-4 forecasts estimate that Indiana food products will grow steadily at an annual rate of around 2–3 percent through 2040. Figure 2.34 displays trends in rail shipments of food product that originate in Indiana.

Figure 2.34. Past and Future Originating Indiana Rail Food Products Traffic by Tons



Sources: 2014 Surface Transportation Board Carload Waybill Sample, Association of American Railroads, FHWA Freight Analysis Framework-4

### CHEMICAL PRODUCTS

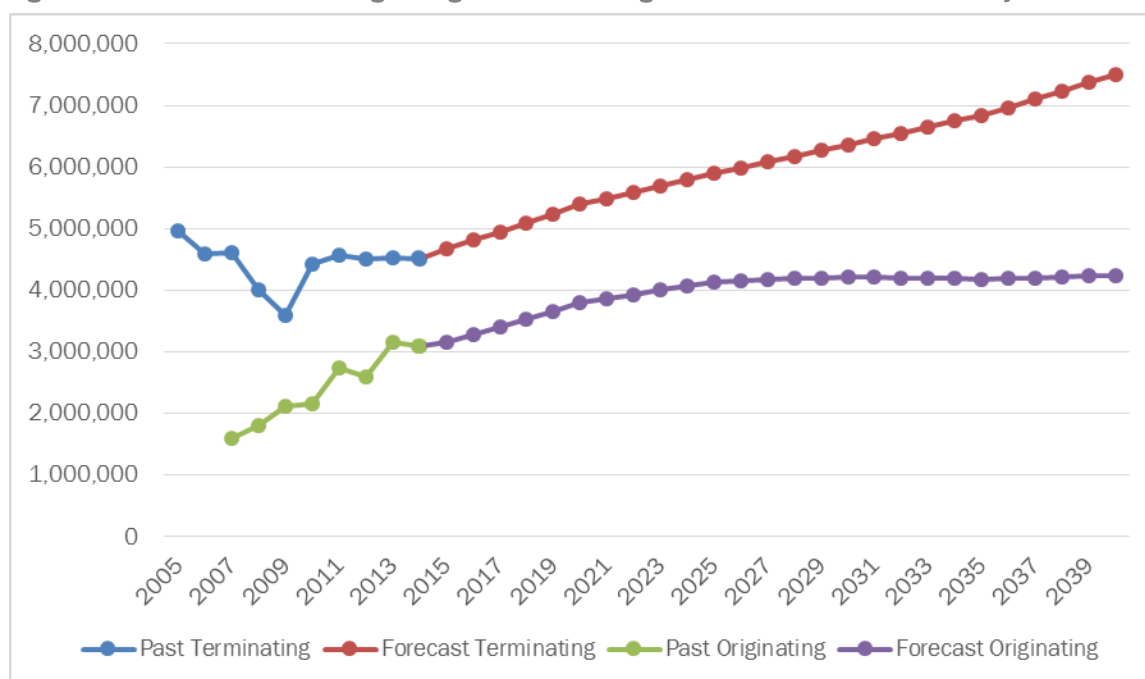
A variety of chemical products are shipped by rail to and from Indiana, which are in turn used by a variety of industries within the state. Products shipped to Indiana include plastic materials and synthetic fibers, resins, rubber, potassium and sodium compounds, and fertilizers.

Intrastate freight accounts for only 4 percent of chemical products terminating by rail in Indiana. Most chemical products are shipped from Illinois (although some of this could be cargo transferred in Chicago), Texas, and North Carolina, which collectively comprise 41 percent of the total.

About 36 percent of rail freight shipped from Indiana classified as chemicals is ethanol. Lake County is the largest among the 24 counties that originate chemical traffic by rail in Indiana. Destinations of chemical traffic shipped by rail from Indiana are mostly located in the eastern half of the U.S. (Appendix A, Figure A.11 displays counties that terminate chemical traffic in Indiana.)

Figure 2.35 displays past and predicted rail shipment volumes of both originating and terminating chemicals. The FHWA FAF-4 forecast predicts faster growth of terminating chemical shipments than originating in Indiana.

Figure 2.35. Past and Future Originating and Terminating Indiana Rail Chemical Traffic by Tons



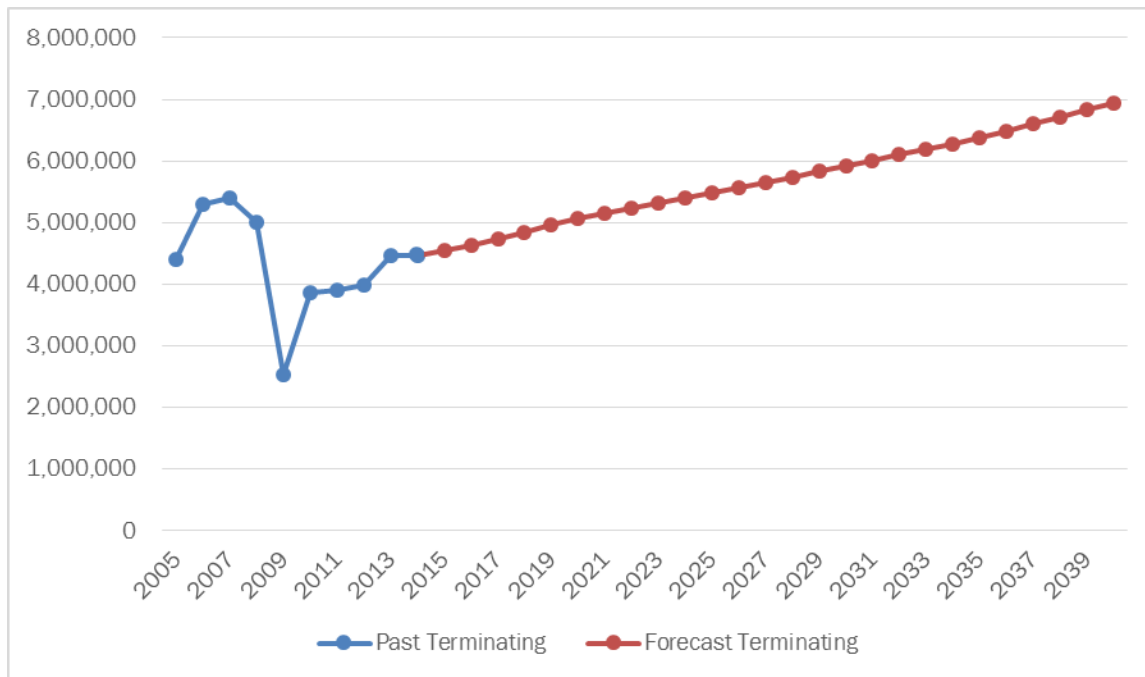
Sources: 2014 Surface Transportation Board Carload Waybill Sample, Association of American Railroads, FHWA Freight Analysis Framework-4

### WASTE (MATERIAL FOR RECYCLING)

Indiana is a significant recipient of waste, much of which consists of scrap metal used in steel manufacturing (93 percent) and chemical or petroleum waste (6 percent). Destinations are concentrated in DeKalb, Montgomery and Whitley Counties. Intrastate freight accounts for approximately 15 percent of waste freight terminating in Indiana. Ohio, Michigan, and Illinois are the largest sources of scrap metal shipped by rail to Indiana (57 percent). (Appendix A, Figure A.12, displays a map of Indiana counties where rail shipments of waste terminate.)

Figure 2.36 shows past and future terminating rail volumes for waste and scrap based on FHWA FAF-4 projections. Rail shipments are projected to increase by roughly half. As would be expected given that many of these scrap shipments are used for steel manufacturing, the rate of growth is roughly similar to that for outbound steel shipments (Figure 2.32).

Figure 2.36. Past and Future Terminating Indiana Rail Waste and Scrap by Tons



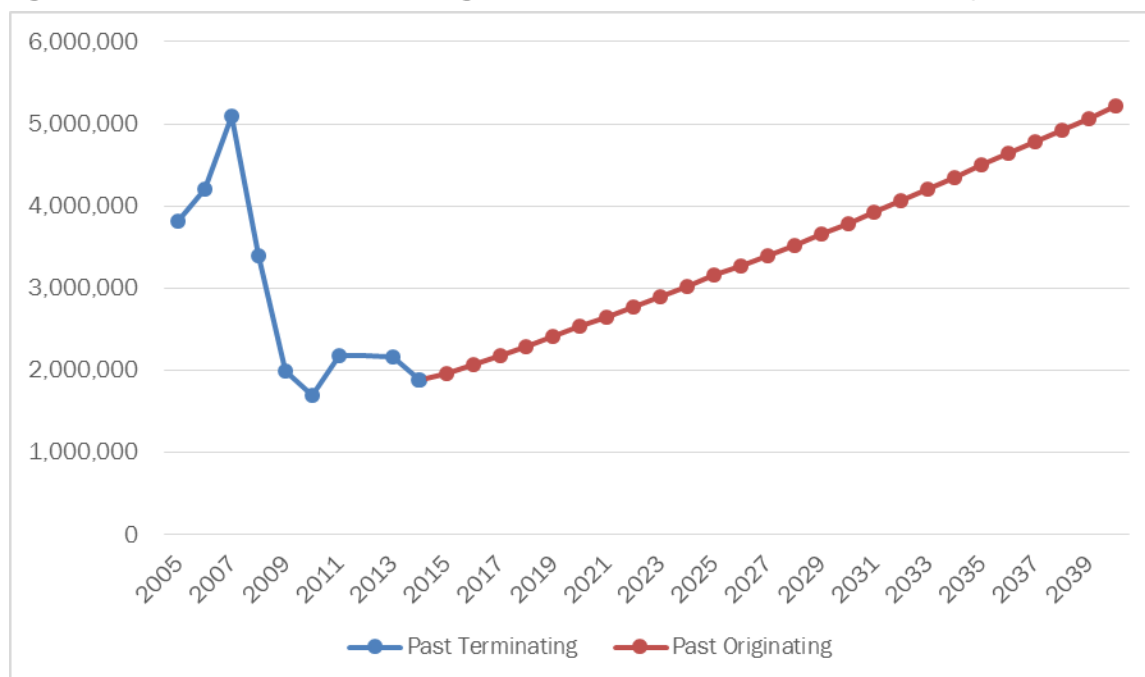
Sources: 2014 Surface Transportation Board Carload Waybill Sample, Association of American Railroads, FHWA Freight Analysis Framework-4

### PETROLEUM AND COAL PRODUCTS

In 2014 about 1.9 million tons of petroleum and coal products terminated by rail in Indiana, much of which was shipped to Lake County. Coke produced from coal was the major product shipped (67 percent), with petroleum coke (21 percent) and petroleum lubricating compounds (9 percent) the other significant products. Collectively, Pennsylvania, Minnesota, and Ohio account for 85 percent of shipments terminating in Indiana. (Appendix A, Figure A.13, displays counties in Indiana where rail shipments of petroleum and coal products terminate.)

As shown in Figure 2.37, shipments of coke and other petroleum/coal products declined dramatically during the recession of 2007/2009 and have not recovered. The FHWA FAF-4 database predicts that rail shipments of these commodities will recover over the next 25 years.

Figure 2.37. Past and Future Terminating Indiana Rail Petroleum and Coal Products by Tons



Sources: 2014 Surface Transportation Board Carload Waybill Sample, Association of American Railroads, FHWA Freight Analysis Framework-4

### INTERMODAL FREIGHT

As shown in Table 2.22, the vast majority of intermodal freight (97 percent) on the Indiana rail network passes through the state between locations outside of Indiana. Indiana generates more tonnage of intermodal freight than it receives.

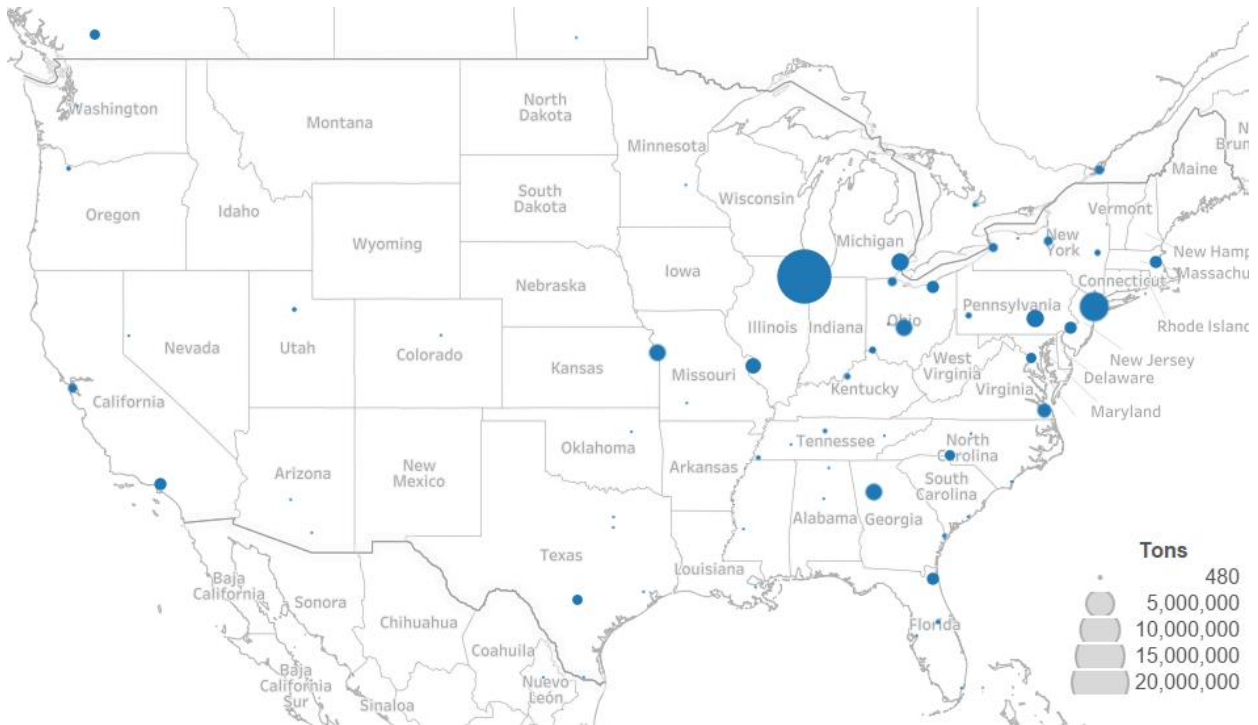
Table 2.22. Percentage of Intermodal Freight Flow by Direction by Tonnage, 2014

Type of Flow	Percentage
Inbound	1%
Outbound	2%
Overhead	97%
<b>Total</b>	<b>100%</b>

Source: 2014 Surface Transportation Board Carload Waybill Sample

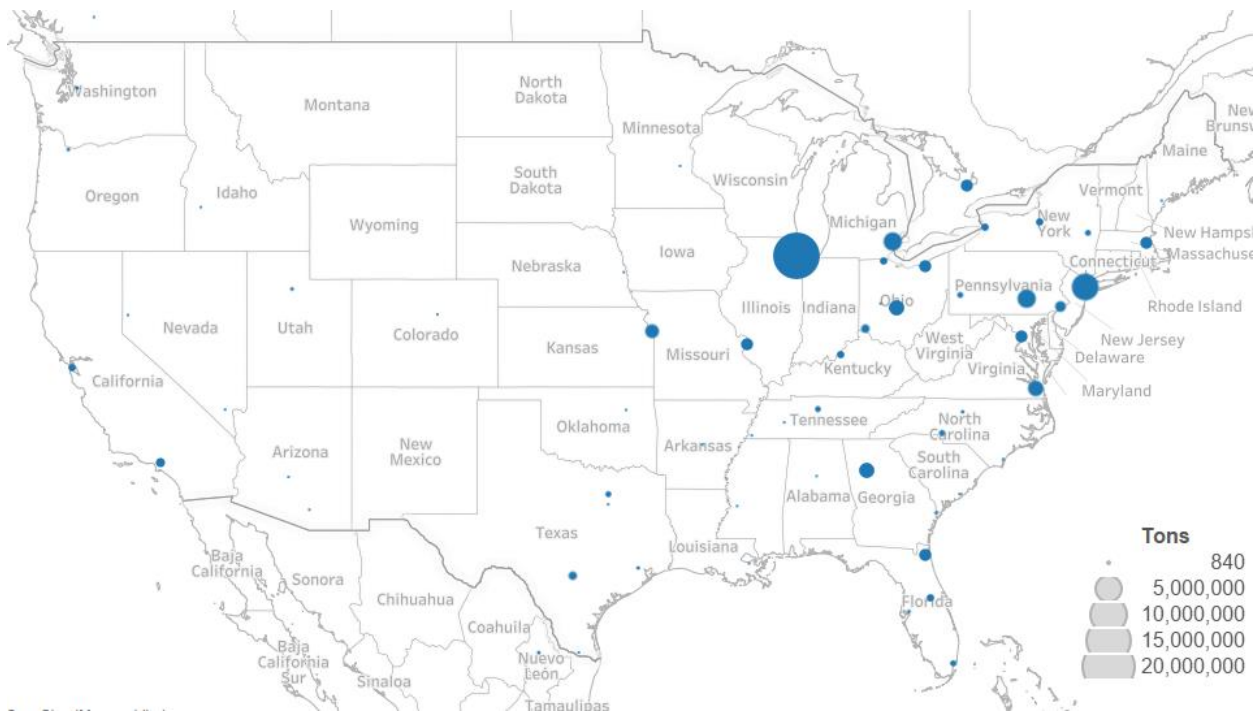
Figure 2.38 and Figure 2.39 present the originating and terminating locations within the U.S. for the overhead intermodal freight that passes through Indiana. As shown, Chicago is by far the largest origin/destination, although Chicago may be the location where freight is transferred but not the ultimate origin/destination for much of this traffic. This is due to the role of Chicago as the major rail-hub within the region that collects and redistributes freight throughout the eastern half of the U.S.

Figure 2.38. Origins of Intermodal Freight Flow Passing through Indiana, 2014 Tons



Source: 2014 Surface Transportation Board Carload Waybill Sample

Figure 2.39. Destinations of Intermodal Freight Flowing Passing through Indiana



Source: 2014 Surface Transportation Board Carload Waybill Sample

Table 2.23 presents the top state pairs for this Indiana overhead intermodal traffic.

Table 2.23. Intermodal Freight Flow Tonnage by Type of Flow

Origin State	Destination State	Freight Flow (in tons)
Illinois	Pennsylvania	3,788,080
Illinois	Ohio	3,319,320
Illinois	New Jersey	3,224,720
New Jersey	Illinois	2,887,520
Pennsylvania	Illinois	1,883,760

Source: 2014 Surface Transportation Board Carload Waybill Sample

Indianapolis is by far the largest hub for originating and terminating intermodal traffic in Indiana, in 2014. Fort Wayne was the second largest. NS ended Triple Crown service at Fort Wayne in 2015, so by 2016 Fort Wayne's share had dropped to zero. Evansville is a smaller intermodal hub, with more originating units than terminating units.

### 2.9.3 Passenger Travel Demand and Growth

Demand for passenger travel continues to grow in Indiana. According to FHWA,<sup>66</sup> 79.2 billion vehicle-miles were traveled in the state in 2014—a 3.4 percent increase from five years earlier and 8.8 percent increase from ten years earlier. Sustained growth in passenger travel will increase demand for intercity and commuter passenger rail, particularly in the Indianapolis metropolitan area where population is expected to grow rapidly in coming years, as described in Section 2.2.1.

Figure 2.40 displays output from the ISTDM, which includes the Indiana Statewide Mobility Corridors, the top-end of the Indiana's highway system. The map displays forecast areas with levels of service (LOS) "C" through "F," which are defined as follows:

- At LOS C roadways have volume to capacity ratios of 0.58 – 0.75 with constrained constant traffic flow below speed limits.
- At LOS D roadways have volume to capacity ratios of 0.75 – 0.90 with unstable flow and passing capacity near zero.
- At LOS E roadways have volume to capacity ratios of 0.90 – 1.00 with unstable flow near capacity.
- At LOS F roadways have volume to capacity ratios above 1.00 with traffic demand exceeding capacity and stop-and-go traffic.

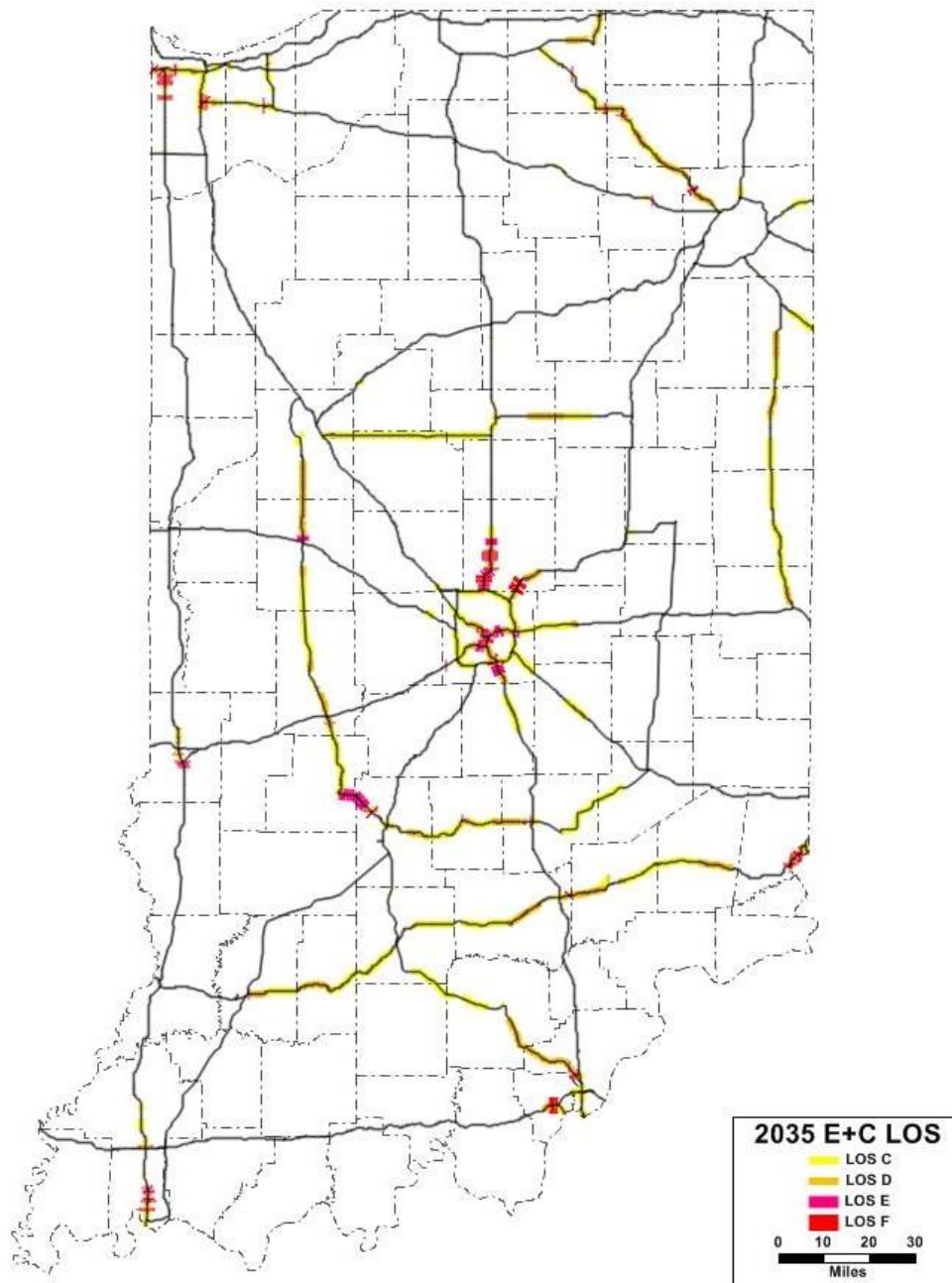
The map assumes that currently committed highway projects<sup>67</sup> are built but no additional ones. The results suggest that without additional highway investment, many of the major interchanges, such as interchanges with I-465 around Indianapolis will be at LOS E or F. Other major arteries will be at LOS C or D. By diverting traffic from roadways, rail can help alleviate future highway congestion.

<sup>66</sup> FHWA Office of Highway Policy Information, *Highway Statistics 2014*.

<sup>67</sup> Major Moves program plus I-69 and the Illiana, other projects from INDOT Scheduling Project Management System.



Figure 2.40. 2035 Level of Service – Indiana Statewide Mobility Corridors – Committed Projects



Source: INDOT

The INDOT travel demand model predicts the total passenger vehicle trips will grow by about 12 percent between 2015 and 2035, an annual growth rate of 0.6 percent compared to the VMT trend of 0.8 percent annual growth during the ten years leading to 2014 as calculated by the FHWA statistics.

As discussed in Section 2.6.2, the Purdue Joint Transportation Research Program at Purdue University has been analyzing the characteristics and preferences of riders on the *Hoosier State* service by surveying passengers. These analyses will likely be periodically updated in the future, which will allow for an analysis of passenger trends on the *Hoosier State*.

### 2.9.4 Fuel Cost Trends

Retail gasoline prices nationwide dropped over 50 percent from a June 2014 high of \$3.69 per gallon to a February 2016 low of \$1.76 per gallon due to supply and demand factors.<sup>68</sup> Through much of 2016 prices stabilized around \$2.20/gallon. Retail diesel prices followed a similar trend, dropping 50 percent from a March 2014 high of \$4.00 per gallon to a February 2016 low of \$2.00 per gallon, stabilizing at around \$2.40 per gallon. Table 2.24 displays average annual diesel prices between 2012 and 2016.

*Table 2.24. Average Annual Diesel Prices (2012 – April 2016)*

	2012	2013	2014	2015	2016
On-Highway Diesel Fuel Retail Price (per gallon)	\$3.97	\$3.92	\$3.83	\$2.71	\$2.31

Source: Energy Information Administration

Gasoline and diesel prices are forecasted to increase steadily over the next 25 years. According to the U.S. Energy Information Administration's (EIA) *Annual Energy Outlook 2016*, motor gasoline prices are expected to increase an average of 1.7 percent per year (in real terms) from 2015 to 2040, with diesel fuel prices expected to increase at a slightly higher rate of 2.2 percent per year.

Future increases in fuel costs will increase the marginal cost of highway transportation relative to rail due to the greater fuel intensity of automobile and truck transportation. EIA projections do not account for any future legislative increases in the gas tax. The projected real increase in gas and diesel prices can be expected to boost passenger and freight rail demand in Indiana.

### 2.9.5 Rail Congestion Trends

As shown in Table 2.25, according to the AAR *Railroad Ten-Year Trends 2005-2014*, network velocity—average distance per hour for trains to operate between origin and destination, including stops—fluctuated between 17.5 and 21.5 freight train-miles per train-hour during this period. Average velocity declined in 2014 due to a combination of oil shipments, large grain harvests, and weather that caused congestion on the rail system, but freight railroad velocity has not exhibited a consistent trend over the past 11 years

*Table 2.25. Network Velocity, Amtrak On-Time Performance*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Network Velocity (Freight Train-Miles per Train-Hour)	18.6	18.4	19.2	19.5	21.3	20.2	19.2	20.6	19.7	17.6	19.4
Amtrak On-Time Performance, Total Percent	69.8	67.8	68.6	71.2	80.4	79.7	78.1	83.0	82.3	72.4	71.2

Source: AAR *Railroad Ten-Year Trends 2005-2014*, U.S. Bureau of Transportation Statistics, *National Transportation Statistics*

Amtrak's OTP has tended to follow trends in freight railroad OTP. Amtrak's OTP was poor when freight rail velocity was low in 2005, improved through 2013, but then declined in 2014 and 2015. Similar to

<sup>68</sup> EIA Short-Term Energy Outlook

freight network velocity, Amtrak on-time statistics for this time period do not point to a specific trend to project into the future.

### 2.9.6 Airport Congestion Trends

At Indianapolis International Airport—the busiest airport in the state, with over 2,000 departures per month—76.9 percent of arrivals and 82.3 percent of departures were on-time in August 2016. Arrival and departure on-time figures were 75.5 and 75.6 percent for Evansville Regional Airport, 78.9 and 83.8 percent for Fort Wayne International Airport, and 77.3 and 80.6 percent for South Bend International Airport.<sup>69</sup>

According to the Federal Aviation Administration’s categorization of airports, Indianapolis is a medium-sized primary hub, meaning it carries between 0.25 percent and 1 percent of national annual passenger boardings.<sup>70</sup> Evansville, Fort Wayne, and South Bend airports are primary non-hubs, with more than 10,000 annual passenger boardings but a share of less than 0.05 percent of boardings nationally.<sup>71</sup> As of 2017, the Gary/Chicago International Airport has no scheduled passenger services, but has had service. The reintroduction of service to this airport could increase passenger aviation capacity in northwest Indiana.

Chicago airports are also used by residents of northwestern Indiana. At Chicago’s O’Hare International Airport, 71.5 percent of arrivals and 69.2 percent of departures were on-time in August 2016. And in the same month at Chicago Midway International Airport, 82.9 percent of arrivals and 77.8 percent of departures were on-time. Both airports are categorized as large-sized primary hubs, with O’Hare International Airport being the third-busiest airport in the United States by total enplanements.

The percentage of flights arriving on-time to Indianapolis varied between 70 percent and 82 percent from 2007 to 2016 with no clear trend (Figure 2.41). Weather is often a major factor in airport delays, and this varies from year to year with little predictability. Annual arrival and departure delay statistics at all the aforementioned airports were largely similar, varying within a 10 to 15 percent range and without any clear trend across time. There were certain years (2009, 2012, 2015) with a greater-than-average percentage of on-time departures and arrivals at all three airports. OTP in 2016 at all airports was better than OTP in 2007. These reflected national trends.<sup>72</sup>

Currently, aviation and intercity passenger rail ridership in Indiana differ by an order of magnitude, so existing rail services are unlikely to have a material impact on airport congestion trends. But if passenger rail service were to grow and become a larger component of Indiana intercity travel, it could reduce future costs of expanding the aviation infrastructure.

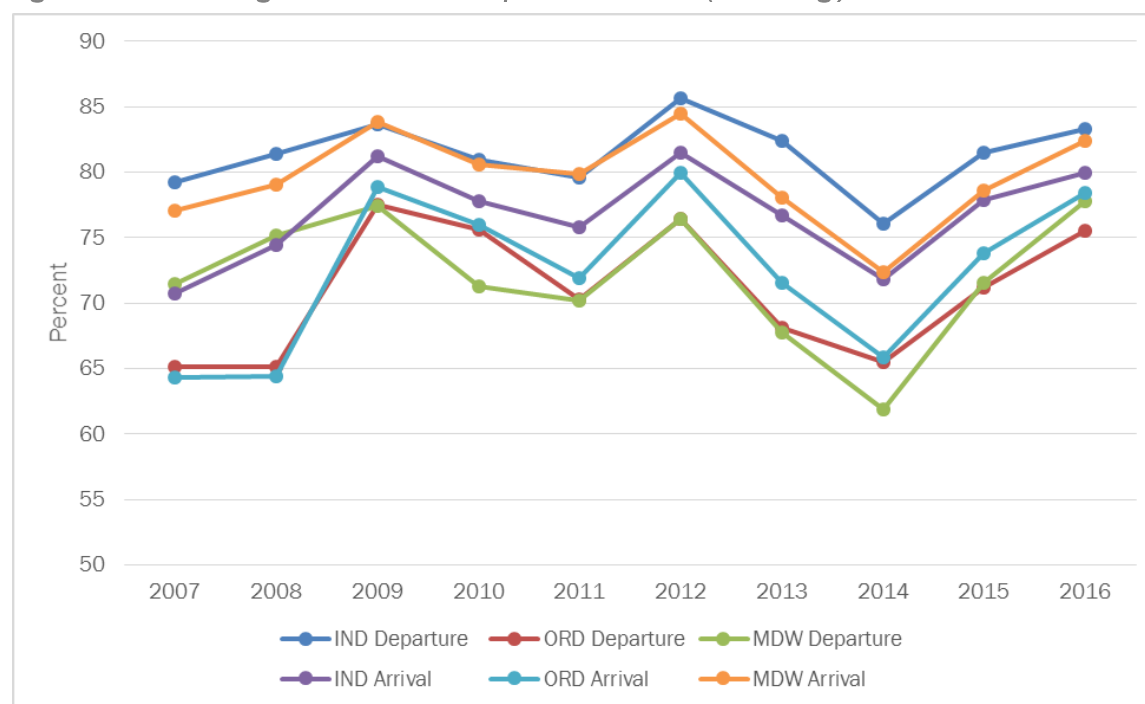
<sup>69</sup> U.S. Department of Transportation. *Air Travel Consumer Report*. October 2016. Pg. 21-25

<sup>70</sup> Federal Aviation Administration. *Airport Categories*

<sup>71</sup> Federal Aviation Administration. *Calendar Year 2015 Revenue Enplanements at Commercial Service Airports*

<sup>72</sup> U.S. Department of Transportation: Bureau of Transportation Statistics. *On-Time Performance – Flight Delays at a Glance*

Figure 2.41. Percentages of Arrivals and Departures On-Time (Jan. – Aug.)



Source: U.S. Department of Transportation: Bureau of Transportation Statistics. On-Time Performance – Flight Delays at a Glance

### 2.9.7 Land Use Trends

The relationship between land use and transportation is well documented. Within Indiana, researchers at Purdue University and Indiana University have employed land use data to predict travel demand in a 44-county area in central Indiana.<sup>73</sup> This is particularly relevant given the high expected growth rate of some counties in central Indiana. As discussed in Section 2.9.1, Indiana’s population is expected to grow 14 percent from 2015 to 2035. The area around Indianapolis is expected to have particularly high population growth, especially Hamilton and Hendricks Counties where population is expected to grow by around 50 percent. Land use has implications for both passenger and freight rail. Population growth and development can increase the demand for transportation capacity, and both freight and passenger rail can provide a modal solution. Dense urban development with a well-developed public transportation network can make intercity passenger rail more likely to succeed. Changes to land use can create conflicts between freight rail and new land uses. For example, rail operations can create conflicts for areas that have shifted from industrial land uses to residential land uses. Land use shifts can alter transportation markets. A shift toward industrial and distribution land uses, such as by a new industrial park, can create markets for freight rail. But shifts could also remove markets for rail. As one example, researchers at Indiana University recently noted that many of the fastest growing parts of Indiana are also the areas that have been designated by the U.S. Department of Agriculture as “Prime Farmland.”<sup>74</sup> The shift away from agriculture reduces demand for agricultural rail shipments.

<sup>73</sup> John R. Ottensman, *Public Works Management & Policy*, “LUCI Land Use in Central Indiana Model and the Relationship of Public Infrastructure to Urban Development,” July 1, 2003.

<sup>74</sup> Tanya J. Hall, *Indiana Business Review*, “Has Development Occurred at the Expense of Indiana’s Prime Farmland,” Spring 2010.

## 3 Passenger Rail Issues, Opportunities, Proposed Improvements and Investments

### 3.1 HOOSIER STATE

As discussed previously, INDOT and online communities began funding the *Hoosier State* in 2013 when the Congress voted to end federal support for Amtrak routes less than 750 miles. Recently, the service was funded through a tax amnesty program of 2015 that reimbursed INDOT \$6 million to support the service during the two-year state budget ending June 2017. In addition, the communities of Crawfordsville, Lafayette, Rensselaer, Tippecanoe County, and West Lafayette together contributed approximately \$255,000 in FY2016 and \$350,000 in FY2017. Going forward, the same communities have agreed to continue support for the service. The Indiana legislature has approved \$3 million per year for the state's current budget ending June 30, 2019. For the first time, the *Hoosier State* has a line item in the state's biennial budget. Amtrak's Beech Grove facility will also help the service by crediting INDOT for moving cars and locomotives to and from the facility on *Hoosier State* trains.

#### 3.1.1 Rail Service Competition

INDOT seeks to provide the best service on the *Hoosier State* at the best cost. A key element of improving rail service and controlling costs is competition. Since its founding in 1971, Amtrak has held a monopoly on intercity passenger rail service in the United States. PRIIA included provisions that states could seek operators other than Amtrak to provide state-supported intercity passenger rail services. Competition not only enables states to look beyond Amtrak for intercity passenger rail service, but also provides incentives for Amtrak to improve its cost structure and customer responsiveness.

INDOT was the first state post-PRIIA to contract intercity passenger rail services with an independent third-party vendor in addition to Amtrak. Between August 2015 and February 2017, Iowa Pacific Holdings provided train equipment and maintenance, on-board services, and marketing. Amtrak provided operating crews, worked with the host railroads, and provided ticketing and reservation services.

INDOT overcame several barriers to introduce this element of competition in operating the *Hoosier State*. One example is the FRA reporting code. Railroads are required to report accidents and incidents to the FRA using a unique reporting code. Because Iowa Pacific and Amtrak jointly provided service, the *Hoosier State* was given its own unique reporting code (HIES).

As a state sponsor using Amtrak and another operator, the FRA initially categorized the state as a "railroad." The designation would have implications for INDOT, such as the interpretation that state employees are railroad employees and subject to federal rules and regulations governing the railroad industry. The FRA eventually withdrew this requirement for INDOT through a letter agreement issued in May 2015.

In 2016, the FRA finalized rulemaking of the System Safety Program that would impose many of the same burdens on state sponsors of intercity passenger rail. Under the new administration, the System Safety Program implementation has been stayed until December 2017.

### **3.1.2 Proposed Improvements for the Hoosier State Service**

Improvements have been proposed for the *Hoosier State* service.

Researchers at the Joint Transportation Research Program at Purdue University conducted a survey of *Hoosier State* passengers in 2015 and 2016.<sup>75</sup> While the focus was a quantitative survey of passengers, researchers also collected anecdotal evidence on passenger preferences for service improvements. Among comments received were that the *Hoosier State* scheduling could be improved, and the service should be faster and more frequent.

In addition, an online survey was administered for this Rail Plan, which included several questions about potential improvements to the *Hoosier State*. Respondents were asked whether the state should continue to fund the *Hoosier State*. Of the 411 individuals who answered this question, 393 (96 percent) felt that the state should continue to support the service. Participants were asked to rate the relative importance of potential improvements with one being the highest priority and seven being a lower priority. As shown in Figure 3.1, of the 361 individuals who responded to this question, the top-rated improvements include reducing travel times, adding track capacity to improve the reliability of the service, and additional frequencies. Amtrak staff consulted during the preparation of this Rail Plan felt the key to improving the *Hoosier State* would be faster, more-frequent service.

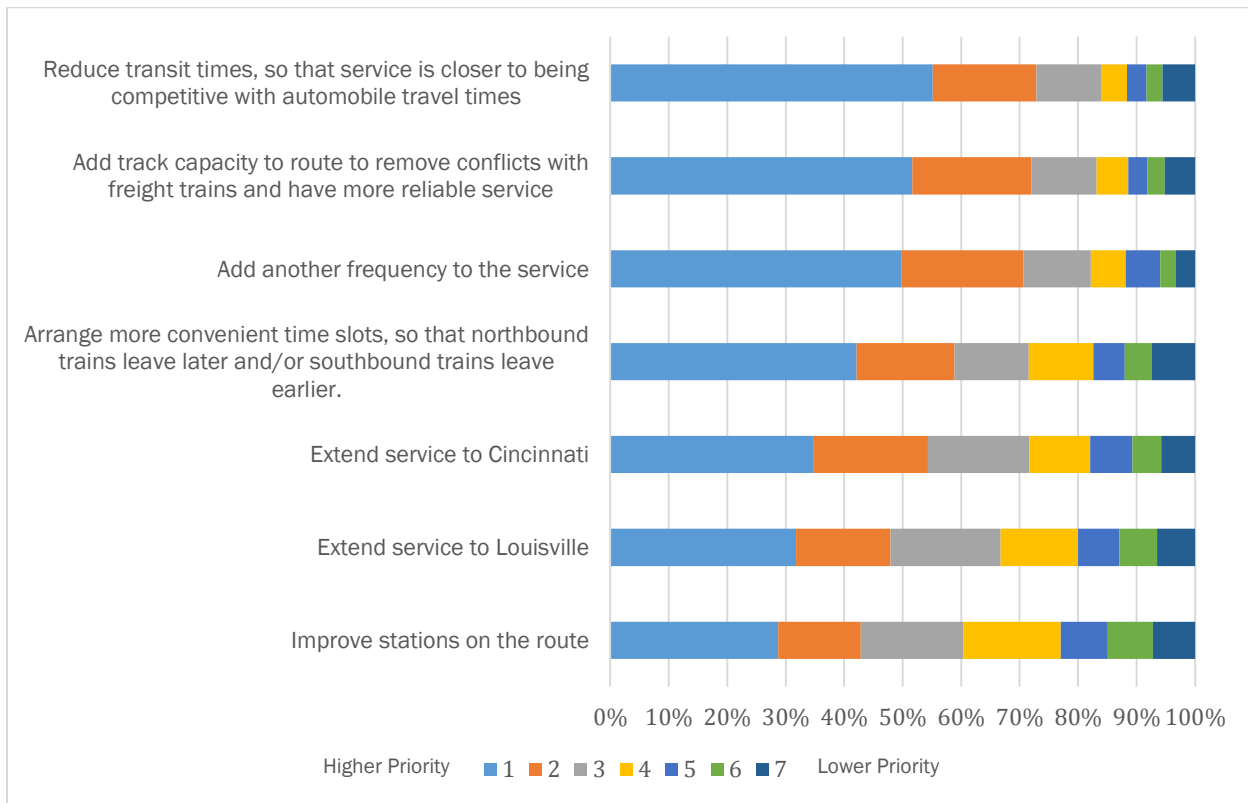
It is important to consider some of the implications of the proposed improvements.

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<sup>75</sup> *SPR 4044: Evaluating Opportunities to Enhance Hoosier State Train Ridership through a Survey of Riders' Opinions and an Assessment of Access to the Line, Survey Analysis*, Nadia Gkritza et. al. of the Joint Transportation Research Program, 2017.



Figure 3.1. Indiana State Rail Plan Survey Results – Priority of Potential Improvements to the Hoosier State



Source: Indiana State Rail Plan Online Survey

**Reduced travel times.** Because the *Hoosier State* operates on rail lines owned by freight railroads, improving travel times requires negotiations with the host railroads. The most promising improvements do not necessarily improve maximum speeds, but rather resolve areas where train speeds are slow. Ideally, proposed improvements result in “win-win” solutions where both passenger and freight operations are improved.

**Increase in frequency.** Most likely, adding a frequency to the *Hoosier State* will roughly double the associated operating expenses since most costs are specific to each passenger train. For example, increasing frequency would double the costs of train crew labor, payments to host railroads, fuel and power, and car and locomotive maintenance and servicing.

Another frequency will also require significant capital investments. Amtrak, on behalf of the state, would need to reach agreement with host railroads to allow another frequency. The host railroad could first require payment for additional capacity so that the new passenger service does not interfere with existing freight service.

**Changing arrival and departure times in Chicago.** Northbound *Hoosier State* trains depart Indianapolis Union Station at 6:00 AM Eastern time and arrive in Chicago Union Station at 10:00 AM Central time, while southbound trains depart Chicago Union Station at 5:45 PM Central time and arrive in Indianapolis at 11:39 PM Eastern time. The scheduling of the *Hoosier State* mirrors Amtrak’s long-distance train, the *Cardinal*, and is designed to facilitate train connections in Chicago. Table 3.1 displays the Amtrak arrivals and departures at Chicago Union Station by route. Most Amtrak routes



arrive before the southbound *Hoosier State* leaves Union Station, and most routes depart after the northbound *Hoosier State* arrives at Union Station. These connections are only valuable to Indiana if a significant portion of *Hoosier State* passengers connect to other services.

*Table 3.1. Amtrak Arrivals and Departures at Union Station, Chicago*

Route	Arrives at Chicago	Leaves from Chicago
Hoosier State	10:05 AM	5:45 PM
Cardinal	10:05 AM	5:45 PM
Wolverine	10:46 AM, 3:57 PM, 10:56 PM	7:20 AM, 12:50 PM, 6:00 PM
Blue Water	11:45 AM	4:00 PM
Pere Marquette	9:11 AM	6:30 PM
Southwest Chief	3:15 PM	3:00 PM
California Zephyr	2:50 PM	2:00 PM
Capitol Limited	8:45 AM	6:40 PM
Empire Builder	3:55 PM	2:15 PM
Hiawatha	7 per day	8 per day
Texas Eagle	1:52 PM	1:45 PM
Lake Shore Limited	9:45 AM	9:30 PM
City of New Orleans	9:00 AM	8:05 PM
Saluki	1:00 PM	8:15 AM
Illini	9:45 PM	4:05 PM
Lincoln Service	10:00 AM, 12:20 PM, 8:40 PM, 11: 10 PM	7:00 AM, 9:25 AM, 5:15 PM, 7:00 PM
Carl Sandburg	9:53 PM	7:35 AM
Illinois Zephyr	10:35 AM	5:55 PM

Source: Amtrak website

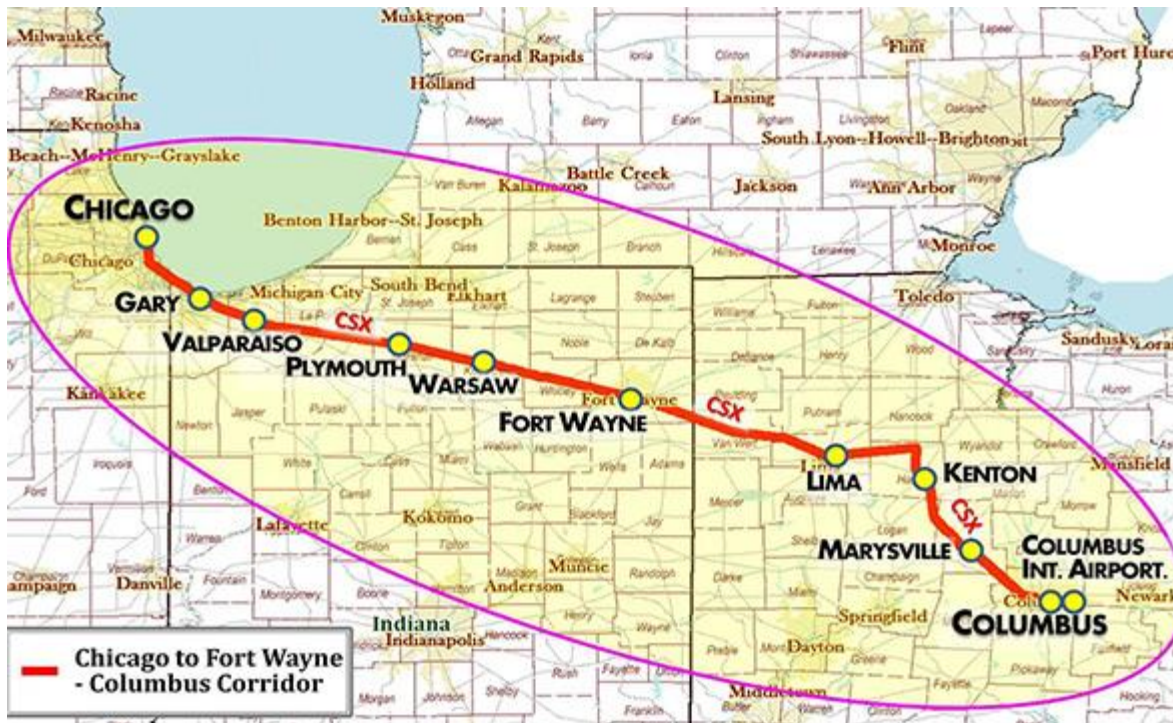
## 3.2 MICHIGAN CHICAGO HUB (CHICAGO-DETROIT/PONTIAC) IMPROVEMENTS

The Chicago-Detroit/Pontiac Passenger Rail Corridor is an initiative led by the Michigan Department of Transportation (MDOT) to improve the corridor between Chicago and Detroit/Pontiac for speeds up to 110 miles per hour. Improvements have been completed for the segment between Porter and Kalamazoo, MI. MDOT's current efforts focus is on the segment between Kalamazoo and Dearborn. A Tier 1 Final Environmental Impact Statement is with the FRA for final review. The corridor passes through the "South-of-the-Lake" area (Hammond/Whiting and Michigan City) in Indiana. INDOT, along with the Michigan and Illinois DOTs, are the program sponsors.

## 3.3 NORTHERN INDIANA PASSENGER RAIL ASSOCIATION (NIPRA)

The NIPRA seeks to re-establish passenger rail service between Chicago and Columbus, OH, through Fort Wayne along the route as shown in Figure 3.2. The mayors of nine municipalities along the route signed a Memorandum of Agreement to cooperate in developing the corridor.

Figure 3.2. Chicago, IL to Columbus, OH- Rail Corridor



Source: Northern Indiana Passenger Rail Association

NIPRA released a feasibility study and business plan in 2013 that proposed a full build out of a 300-mile Chicago-Fort Wayne-Columbus corridor with an estimated capital investment of \$1.285 billion. This investment would go toward procuring new rolling stock and improvements to the existing infrastructure to enable 110-130 mph service with six express and six standard roundtrips per day (12 total) between Chicago and Columbus. The study estimates a benefit cost ratio of 1.71 (considering a 3 percent discount rate) and suggests the completed project will return an estimated \$6.241 billion in benefits over a 30-year project life.

In January 2017, the City of Fort Wayne and the FRA announced the authorization of a \$350,000 environmental assessment for the Chicago-Fort Wayne-Columbus corridor to advance prior planning and fundraising efforts. This study, expected to be completed in late 2017, will ensure compliance with the National Environmental Policy Act and confirm the possibility of restoring passenger service. Pending the outcome of the assessment, preliminary engineering and eventual construction and capital improvements to the corridor may follow.<sup>76</sup>

### 3.4 MIDWEST REGIONAL RAIL PLANNING STUDY

The FRA-led Midwest Regional Rail Planning Study is a multi-state planning effort to develop a comprehensive vision and governance model for an integrated regional rail network to advance passenger rail planning, procurement, and operations in the Midwest. The study builds upon previous

<sup>76</sup> <http://niprarail.org/>

work by the Midwest Regional Rail Initiative<sup>77</sup> and MIPRC and is one of several intercity passenger rail regional plans that will comprise the FRA's National Rail Plan as required by PRIIA. Other FRA regional rail plans include the recently completed Southwest Regional Rail Planning Study and the Southeast Regional Rail Planning Study, which is currently underway.

The goals of the Midwest Regional Rail Planning Study are the following:

- Collaborate with stakeholders to identify a long-term vision for high-performance rail service within the region
- Define the priorities, studies, and investments that are needed to advance passenger rail improvements across the multi-state network
- Illustrate the intermodal linkages to create an integrated intercity transportation system to adequately accommodate travelers from origins and destinations throughout the region
- Identify institutional and financial arrangements as well as appropriate planning and phasing needed to implement the plan

To fulfill these goals, the project includes several key components. The project will define existing passenger rail network conditions and assess the existing travel market. The FRA intends to develop network and service plan concepts with a prioritization of corridors and projects within each corridor. Project prioritization will take into account constraints of the service plans. Estimated costs, benefits, and funding of the network plan will drive future investments, environmental studies, and planning activities. The study began in March 2017 and is expected to be complete in early 2018. INDOT is participating in the study as a primary stakeholder.

### 3.5 CHICAGO/INDIANA GATEWAY IMPROVEMENTS

Indiana's existing passenger rail network relies heavily on movements to and from Chicago. Chicago serves as both the region's passenger-rail hub and the nation's premier freight-rail hub. Currently, more than 1,200 trains pass through the Chicago region daily—500 freight and 760 passenger trains—each traversing rail infrastructure designed for lower volumes of traffic than are being carried today. The collective traffic volumes of passenger and freight rail movements often result in congestion that reduces performance and reliability. Several initiatives seek to address Chicago rail network issues.

#### 3.5.1 Chicago Region Environmental and Transportation Efficiency Program (CREATE)

CREATE is a partnership between the State of Illinois, City of Chicago, Metra, Amtrak, AAR, and U.S. DOT that seeks to alleviate rail congestion and associated highway congestion with grade-separation structures throughout the Chicago area. CREATE was formed on June 16, 2003, by former Chicago Mayor Richard M. Daley, who recognized the Chicago region's rail capacity needs and convened appropriate stakeholders to advocate for necessary improvements. The estimated \$4.4 billion

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<sup>77</sup> The Midwest Regional Rail Initiative was a consortium formed in 1996 with the purpose of improving and expanding passenger service in the Midwest United States. Indiana, along with Illinois, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin, and the FRA are members. Primary INDOT participation in this consortium occurred between 1996 and 2007.

initiative is underway with \$1.4 billion in projects (28 of 70 projects completed. The following types of projects are included in this initiative:

- Road/rail grade separations
- Rail/rail grade separations
- Capacity improvements and bottleneck reductions
- Viaduct improvements
- Grade crossing safety enhancements
- Integrated dispatch system

Projects are intended to accommodate past and future growth.<sup>78</sup>

### 3.5.2 *Indiana Gateway Project*

The Indiana Gateway Project was a \$71.4 million investment in eight track-infrastructure projects in the Indiana approaches to Chicago between Burdick and the Indiana/Illinois state line. Funded through the American Recovery and Reinvestment Act of 2009, the Indiana Gateway Project was intended to improve passenger rail service by providing more capacity and system redundancies that can better accommodate passenger and freight traffic through the congested Porter Interlocking and adjacent areas. Construction on the project began in 2013 and was completed in May 2017. Figure 2.24 in Section 2.7.5 includes a map of the Indiana Gateway Project.

### 3.5.3 *Amtrak Chicago Gateway Blue Ribbon Panel*

The Amtrak Chicago Gateway Blue Ribbon Panel builds on CREATE and the Indiana Gateway Project by prioritizing infrastructure improvements and advocating for these improvements. Created in October 2014, the Panel comprises government and private-sector professionals with experience in rail policy issues. Following outreach and collaboration with nearly 100 stakeholders and experts, the Panel released a set of recommendations and action items in October 2015 to be prioritized and acted upon in the near future to adequately accommodate the existing and proposed rail traffic demand.

Among the Panel's recommendations was additional investment on the Porter, IN to Chicago corridor. This would better accommodate the approximately 100 trains that travel the corridor each day. The centerpiece of this recommendation involves the construction of a separated passenger-only right-of-way, known as the "South-of-the-Lake" line, to accommodate speeds of up to 110 mph. Through right-of-way agreements made when federal funding was committed to the Englewood Flyover and Indiana Gateway Projects, Amtrak has rights to construct dedicated passenger tracks within the NS right-of-way. This capacity expansion would allow Michigan's Amtrak services to expand beyond their existing frequencies and support the implementation of faster and more frequent services east of Chicago.<sup>79</sup>

<sup>78</sup> [http://www.createprogram.org/linked\\_files/2017\\_CREATE%20overview\\_website.pdf](http://www.createprogram.org/linked_files/2017_CREATE%20overview_website.pdf)

<sup>79</sup> <https://www.amtrak.com/ccurl/873/180/Chicago-Gateway-Amtrak-Blue-Ribbon-Panel-Final-Report.pdf>,  
<https://www.amtrak.com/servlet/ContentServer?c=Page&pagename=am%2FLayout&cid=1251629400213>

## 3.6 NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT

NICTD has a number of initiatives aimed at maintaining infrastructure and cars in a state of good repair, and improving and expanding service.

### 3.6.1 Five-Year Improvement Program

As shown in Table 3.2, NICTD's five-year transportation improvement program includes \$1.1 billion in investment in the system to advance a state of good repair for the system's assets, install PTC, acquire new rolling stock, expand capacity, and extend the line to Munster/Dyer, IN, realign the track in South Bend.

*Table 3.2. Summary of NICTD 2017 – 2021 Transportation Improvement Plan*

Project/Project Type	2017	2018	2019	2020	2021	Total
West Lake Project	\$20,000,000	\$50,000,000	\$91,190,000	\$231,920,000	\$210,920,000	\$604,030,000
Double Track Gary to Michigan City	\$4,000,000	\$20,000,000	\$110,000,000	\$120,000,000	\$36,000,000	\$290,000,000
South Bend Realignment	\$0	\$5,000,000	\$5,000,000	\$10,000,000	\$0	\$20,000,000
PTC Implementation	\$25,000,000	\$25,000,000	\$25,000,000	\$0	\$0	\$75,000,000
Rolling Stock Acquisition	\$0	\$0	\$0	\$5,000,000	\$5,000,000	\$10,000,000
State of Good Repair Projects	\$21,822,623	\$22,259,075	\$22,704,256	\$23,158,341	\$23,621,508	\$113,565,803
Total	\$70,822,623	\$122,259,075	\$253,894,256	\$390,078,341	\$275,541,508	\$1,112,595,803

Source: NICTD website

### 3.6.2 Equipment Replacement

The agency also intends to replace 58 cars. This includes 41 cars purchased in 1982 and 17 cars purchased in 1992. The new cars will feature enhanced safety features and improved passenger amenities. NICTD estimates that 100 percent of the \$30 million investment will come from state or local sources.

### 3.6.3 West Lake Extension

In 2011, NICTD released the West Lake Corridor Study, the culmination of years of planning and discussions that began with the Northwestern Indiana Regional Planning Commission in 1989. The study identified an extension of the existing South Shore Line to Munster/Dyer, IN that would best serve the public transportation needs of the area.

According to the West Lake Corridor's Draft Environmental Impact Statement, NICTD's intended goals for the proposed project are the following:

- Increase transportation options for accessing downtown Chicago
- Reduce travel time to downtown Chicago
- Reduce the parking burden at existing transit stations
- Reduce travel costs
- Promote economic development



The proposed Preferred Alternative consists of a nine-mile extension in western Lake County providing improved station accessibility for Lake County commuters by reducing the travel distance to and from stations facilitating an estimated 7,120 daily additional boardings. As shown in Figure 3.3, the line will converge with the South Shore Line at Hammond, IN. Four new stations are proposed on the corridor: Munster/Dyer Main Street Station, Munster Ridge Road Station, South Hammond Station, and Hammond Gateway Station.

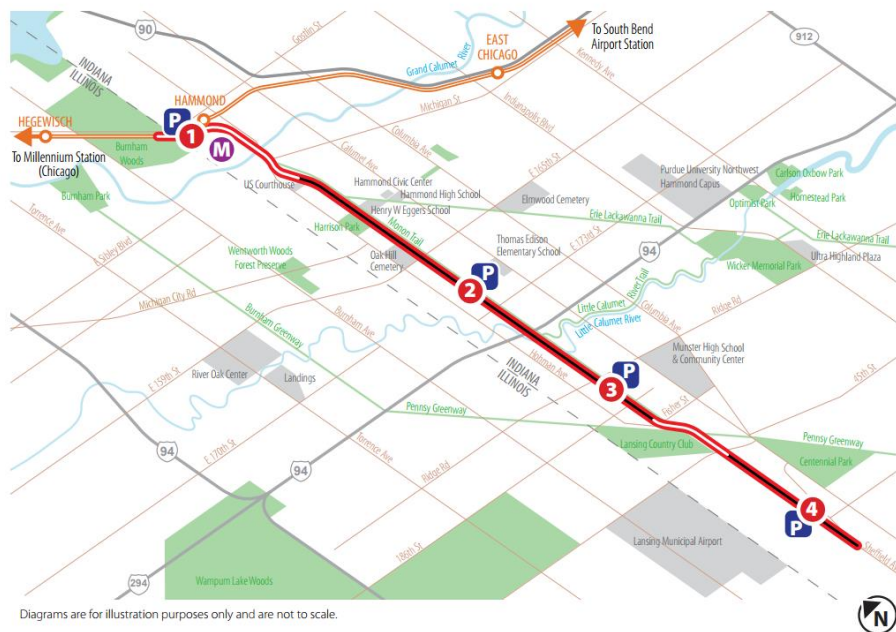
Figure 3.3. West Lake Corridor Project



### LOCALLY PREFERRED ALTERNATIVE

#### LEGEND

- 1 Hammond Gateway Station
- 2 South Hammond Station
- 3 Munster Ridge Road Station
- 4 Munster/Dyer Main Street Station
- M North Hammond Maintenance Facility
- P Station Parking
- West Lake Corridor Locally Preferred Alternative (Elevated)
- West Lake Corridor Locally Preferred Alternative (At-Grade)
- South Shore Line
- South Shore Line Station



Diagrams are for illustration purposes only and are not to scale.

Source: Northern Indiana Commuter Transportation District

## 3.6.4 Capacity Projects

### DOUBLE TRACKING

Much of the South Shore Line is a single-track railroad with constrained operational flexibility, particularly between Gary and Michigan City. With a large portion of the passenger demand being between Michigan City, Gary, and Chicago, NICTD has proposed extending the existing double-track infrastructure between Chicago and Gary to Michigan City (Figure 3.4). Double tracking will improve operational flexibility and reliability, expand maintenance windows, and provide system redundancy in the case of service failures. This initiative would involve double tracking 25.9 miles at an estimated cost of \$290 million.

Governor Eric Holcomb has stated his personal support of the double-track project. The governor wants to capitalize on the location of the double tracking of the NICTD line, thus improving access for Hoosiers traveling between northwest Indiana and Chicago. The state's FY18 and FY19 budget includes \$20 million for the double tracking project.

Figure 3.4. Northern Indiana Commuter Transportation District Double Tracking



Source: Northern Indiana Commuter Transportation District

### METRA CAPACITY IMPROVEMENTS

The South Shore Line shares the right-of-way with Metra's Electric District between 115<sup>th</sup> Street in South Chicago to Millennium Station near the Loop. While much of this shared right-of-way consists of four tracks, a significant bottleneck exists on the approach to Millennium Station where the Metra Electric District narrows to three tracks. This constrains South Shore Line operations to a single track arriving and departing Millennium Station, which prevents simultaneous inbound and outbound train movements. In the event of an operational or infrastructure failure in this critical segment, this creates a single point of failure that influences operations over the entire line. NICTD proposes to construct another approach track to Millennium Station to improve system reliability, operational flexibility, and increase capacity. The estimated capital cost of a new approach into Millennium Station is \$30 million with an anticipated 50 percent provided through federal funds and the remaining 50 percent provided through state or local sources. Allocations between states and counties have not yet been determined. NICTD is completing a capacity study with Metra. County allocation could be based on derived benefits as well as service factors.

### 3.6.5 Station Projects

In addition to the identified critical baseline improvements and large capital improvements, NICTD also proposes a set of market expansion projects intended to increase the efficiency on the existing South



Shore Line by reducing station dwell times and to improve rail alignments which will reduce overall trip times.

### **PORTAGE/OGDEN DUNES HIGH-LEVEL PLATFORMS**

The Portage/Ogden Dunes Station is a former flag stop station on the South Shore Line that has grown in ridership over the years. The current station facility has one low-level platform that serves the inbound track with small pedestrian crossings to reach the outbound track. These limited facilities allow only a single train to serve the station at one time and increases passenger boarding and alighting dwell time. NICTD proposes to construct two high-level platforms on the inbound and outbound track, complete with gauntlet track, or interlaced track, which two railway tracks run parallel on a single track bed to allow continued freight operations. Half of the estimated \$7 million project cost is expected to be financed through federal funds with the remaining half coming from state or local sources.

### **GARY STATION IMPROVEMENTS**

The South Shore Line serves three stations in Gary: Gary/Chicago Airport, Gary Metro Center, and Miller—each with low-level platforms that collectively add significant dwell times to existing operations. NICTD has proposed two alternatives to improve operational efficiency, reduce dwell times and maintenance costs, and improve existing passenger station facilities in Gary.

The first alternative proposes to consolidate Gary Metro Center Station in downtown Gary and the Miller Station at Lake Street to a new location near the I-65 and Indiana Toll Road interchange with a high-level platform and expanded parking facility, together estimated to cost \$38 million. The second proposed alternative would rebuild the Gary Metro Center and Miller Stations with high-level platforms to accommodate eight-car trains and close the Gary/Chicago Airport Station at an estimated cost of \$52 million.

## **3.6.6 Track Realignments**

### **MICHIGAN CITY REALIGNMENT**

The project would eliminate two miles of embedded street running track and instead move NICTD to its own ballasted double-track right-of-way with a new station. The new station could then be a focus of retail and residential development.

### **SOUTH BEND REALIGNMENT**

This \$20 million project would enable trains to access South Bend Airport by a more direct approach, eliminating 16 of 23 grade crossings and reducing travel time by up to 10 minutes.

## **3.6.7 Positive Train Control**

NICTD is required to comply with the FRA's mandate to implement PTC on railways with passenger service. In November of 2015, NICTD approved a \$90 million bond to install PTC on the South Shore Line and is expected to achieve full implementation before the FRA deadline of December 2018. NICTD anticipates the bond to be paid by state sources. NICTD's current five year Transportation Improvement Plan lists \$75 million to be paid for PTC implementation along the corridor.

## 4 Freight Rail Issues, Opportunities, Proposed Improvements and Investments

Efforts to improve Indiana's freight rail network are ongoing. Freight rail issues and opportunities, and associated proposed improvements and investments, fall into a number of categories. Those to be explored in this chapter are the following:

- Safety and crossings
- State of good repair/corridor preservation
- Multimodal issues
- Rail and economic development
- Connectivity

The projects listed here are physical improvements. Because freight rail service within Indiana is provided by private companies, INDOT does not control the specific freight services that are provided or the service gaps that may exist. The provision of freight rail service is market driven. Railroads—particularly the smaller railroads operating in Indiana—have limited financial resources and cannot make all of the infrastructure investments that they would prefer. INDOT helps to improve and maintain rail infrastructure in order to improve or enable additional rail services beyond that which would be possible with private-sector funding alone in order to generate public benefits. Due to their nature, freight projects in some cases do not involve an alternatives analysis beyond a build and a no build alternative. These are often projects proposed by private-sector partners for specific needs on their rail lines.

Freight rail investments can leverage or be leveraged by other modal investments. For example, improvements to highway intermodal connectors can improve access to rail facilities. Similarly, improved maritime facilities can facilitate movement between rail and barge or lake vessels. Freight is seldom transferred between air and rail modes, but air freight and rail service can nevertheless complement each other where a transportation hub provides shippers access to multiple modes, including highway, rail, and air freight. Freight rail investments and passenger rail investments can complement each other as well. The Indiana Gateway Project, for example, has created flexibility and added capacity in northwest Indiana not only for passenger trains, but also for freight trains.

### 4.1 SAFETY AND CROSSINGS

As noted in Section 2.8, 268 fatalities were associated with Indiana's rail system between 2006 and 2016. Of these, 146 occurred at rail-highway at-grade crossings, 117 involved trespassers on railroad rights-of-way, and five were associated with other causes. INDOT has the greatest ability to improve safety at rail-highway at-grade crossings. Between 2006 and 2016, 1,222 crashes occurred at Indiana rail-highway at-grade crossings, including those that involved fatalities and those that did not. According to the FRA crossing inventory database, Indiana is ranked sixth in the nation in the number of public crossings. According to Operation Lifesaver, the state was ranked sixth (tied with Louisiana) for the number of rail-highway at-grade crossing fatalities in 2016.

INDOT completed the *Strategic Highway Safety Plan* (SHSP) in 2016, a requirement to be eligible for federal Highway Safety Improvement Program funds, of which the Railway-Highway Crossings Program (Section 130) is a component. In the SHSP, INDOT identified its highway safety goal as a move “Toward Zero Deaths.” The SHSP focuses on reducing severe crashes, those that result in death or serious injury on publicly maintained roadways. Among the areas where crashes are often severe are rail-highway at-grade crossings.

As discussed in detail in Section 2.8, INDOT’s ongoing efforts to improve safety at rail-highway at-grade crossings include the following:

- Grade crossing closure
- Grade separation
- Train-activated warning device improvement
- Passive warning device improvement
- Education
- Enforcement

During the outreach conducted for this State Rail Plan, crossings were a frequent concern of stakeholders. In an online survey for the State Rail Plan, the condition and safety of rail-highway at-grade crossings were the top issues among those respondents who identified themselves as concerned with community impacts of rail.

Some railroad representatives consulted for this State Rail Plan felt that a number of crossings on their systems were unnecessary and they would like to see them be permanently closed. These are crossings that carry little vehicular traffic and are near alternate crossings. Safety of the public and railroad operations could be improved by closing these crossings with relatively little inconvenience to the public. INDOT staff look for opportunities to consolidate crossings during ongoing crossing inspections. When warning devices are upgraded at crossings or crossings are grade separated, INDOT evaluates nearby crossings for closure. Railroad representatives suggested that INDOT should develop a “best practices” manual to help communities close crossings and improve safety on corridors. Railroads and INDOT can work together on an ongoing basis to identify crossings to close, to work with local communities, and potentially offer monetary incentives to communities to close crossings.

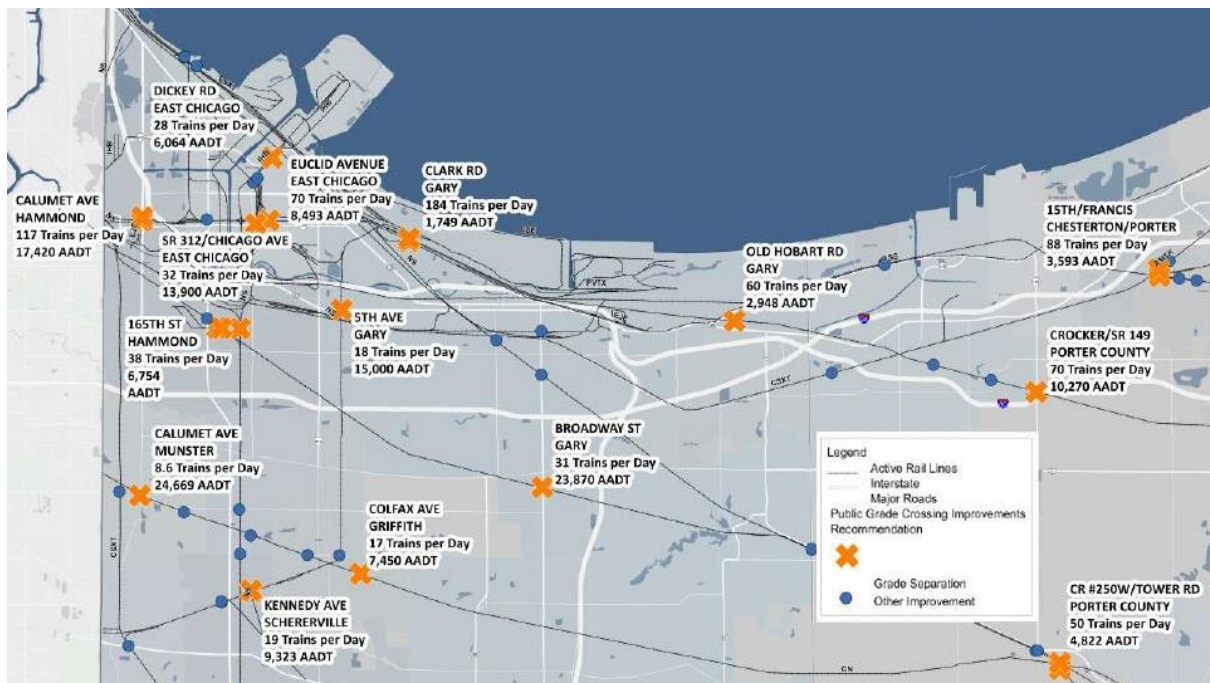
Railroads within Indiana are responsible for maintaining crossing surfaces and active warning devices. Some railroad representatives would prefer that the cost of maintaining crossings be shared with roadway owners or users. When asked to recommend projects for this State Rail Plan and in a similar survey by Railroads of Indiana, short-lines and regional railroads recommended about \$10 million in projects to replace, rehabilitate, or upgrade at-grade crossings.

INDOT targets neither a specific funding level for grade-separation projects nor a specific number of grade separations to complete per year. Although some communities have identified potential grade separations, due to the significant cost to convert an at-grade crossing into a grade-separated structure, the number of grade separations that can be completed over a given time is very limited. Apart from safety implications and convenience to the public, possible grade-separation projects have been recommended by the Conexus Indiana Logistics Council (CILC) as promoting commerce. For

example, a plan by the Northwest Regional Logistics Council identified eight grade-separation projects in Lake County alone.<sup>80</sup> In each case, the existing rail-highway grade crossing was found to impede truck flows.

Northwest Indiana has the highest concentration of rail-highway at-grade crossings and the highest frequency of crashes at rail-highway at-grade crossings in the state. The Northwestern Indiana Regional Planning Commission sponsored an initiative to investigate grade-crossing improvements, referred to as Northwest Indiana VISION (Velocity, Information, Safety, Improvements and Opportunity Network). This group developed 15 high-priority grade separations<sup>81</sup> out of a group of 80 crossings that were identified by a survey of local governments and railroads in Indiana. A map of priority crossings appears in Figure 4.1. The study grouped potential grade separations by their impacts on safety and motorist delay, as well as the cost and feasibility of grade separations. The study investigated funding and financing options but did not suggest a specific implementation plan.

Figure 4.1. Northwest Indiana VISION High-Priority Grade Separations



Source: Northwestern Indiana Regional Planning Commission

## 4.2 STATE OF GOOD REPAIR/CORRIDOR PRESERVATION

Not all of Indiana's rail network has been kept in a state of good repair. Railroad operations are capital intensive, and track maintenance requires large investments in materials, equipment and construction labor on a regular basis. When traffic declines and revenues are marginal, maintenance often is deferred and maintenance requirements accumulate. Many of Indiana's short-line railroads were

<sup>80</sup> Northwest Regional Logistics Council, *Advancing Northwest Indiana's Logistics as the Gateway to the World*, September 2015.

<sup>81</sup> In some cases, a single grade-separation project could involve multiple crossings.

created from rail lines previously owned by Class I railroads. Because they were not growth prospects, previous owners often deferred maintenance before selling the lines.

As noted in Section 2.1.3, FRA track class can be used as an indicator of the condition of railroad tracks. Rail lines with an “Excepted” track rating are exempt from compliance with minimum FRA requirements for roadbed, track geometry and track structure. The excepted track provision permits railroads to conduct limited, slow-speed operations over substandard track on low-density lines, where it is unlikely that a derailment would endanger anyone along the right-of-way. Rail lines with FRA Class 1 track meet certain minimum standards, but train speeds are still limited to 10 miles per hour. Ideally, railroads should maintain their tracks to one FRA class above what they need to operate. An example would be a rail line operating at FRA Track Class 1 level would ideally be maintained to an FRA Class 2 level. About 125 miles of the Indiana rail network are FRA Excepted track, while 385 miles are FRA Class 1. Most of the remaining track is FRA Class 2 or higher.

A related issue is the ability of a track to accommodate today’s current industry-standard 286,000 pound railcars.<sup>82</sup> Three hundred and forty-six miles of the Indiana rail network are not able to accommodate 286,000 pound railcars. This limits the efficiency and competitiveness of these rail lines. Either shippers on these lines must use smaller railcars or they must short-load their railcars. As the railroad industry continues to shift to bigger and heavier railcars, these shippers will be required to use heavier, more expensive cars—whether railroad infrastructure allows them to fully load these railcars or not. Class I railroads sometimes try to avoid interchanging traffic with short-lines that are not 286,000 pound compatible. In other cases, traffic heading toward non-286,000 pound compliant rail lines must be diverted onto alternate routes that can accommodate heavier railcars.

Not only is the condition of the tracks a significant issue, but also the condition of rail bridges crossing Indiana’s roadways and waterways. At least 120 bridges within Indiana are not able to accommodate 286,000 pound railcars. Replacing or upgrading bridges that are in a poor state of repair and/or have low load ratings is extremely costly.

Between a survey of rail needs conducted for this State Rail Plan, a similar survey conducted by Railroads of Indiana of its membership, and a recent survey of rail needs conducted by the CILC, \$241 million in rail line rehabilitation needs have been suggested. Some of these projects would simply bring rail lines back to a state of good repair, while others would not only restore rail lines to a state of good repair, but increase their capabilities. Most of the projects would involve tie replacement and/or rail replacement, ballast and surfacing. Some are bridge upgrades, repair, or replacements. All but \$14 million are on short-line/regional railroad lines.

The condition of rail lines in Indiana has implications for corridor preservation. As maintenance continues to be deferred, the quality of rail service on the line and the economics of the remaining rail service on that line declines. Train speeds slow and costly derailments occur. It becomes difficult for the railroad to attract new business. Ultimately, the line may need to be embargoed as it becomes impassible. Funding sources such as Indiana’s IRSF provide financial assistance in helping to maintain Indiana railroads as viable entities and maintain service on these rail lines.

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<sup>82</sup> Some rail lines maintained in a poor state of repair can nevertheless accommodate 286,000 pound railcars, while some rail lines maintained in a good state of repair cannot.

Some rail lines within Indiana could be threatened with abandonment. For example, as noted in Section 2.1.5, about 61 miles of rail lines are inactive but not abandoned. When railroads continue to own rail lines that they do not use, these lines represent financial losses. Any applicable taxes and insurance must still be paid even though these lines generate no revenue. Any rail-highway at-grade crossings on these lines must continue to be maintained. Railroads may continue to own these lines because they could be useful in the future. If the railroad decides that prospective future benefits are not worth current expenses, the company could file for abandonment. Minimal traffic and poor state of good repair can also indicate that a rail line is threatened. Railroads will not be able to improve the condition of the line until revenue from freight traffic can pay for these improvements. For the purpose of this State Rail Plan, “minimal traffic” is defined as 50 carloads per mile or fewer over a one year time period. Fifty-four miles of track have traffic density below 50 carloads per mile and are rated FRA Excepted.

Rail line abandonment is a relevant issue because it often results in the permanent loss of a transportation corridor. In many cases, ownership of portions of the corridor revert to adjacent landowners and the right-of-way is no longer continuous. It is far more expensive and difficult to assemble and build a new right-of-way than it is to restore or rehabilitate an existing rail corridor, so the loss of a corridor could eliminate future rail opportunities.

## 4.3 MULTIMODAL ISSUES

Multimodal transportation allows users to benefit from the advantages of multiple transportation modes for one freight movement. For example, intermodal (container/trailer) and transload shippers can take advantage of rail’s low cost for shipping long distances while benefiting from the flexibility of trucking, where products can be shipped to/from companies’ premises without direct rail access. Because half of intermodal shipping consists of foreign trade, intermodal access is a key element to connecting Indiana to global markets. Likewise, Indiana’s port connections can also provide access to global markets.

Stakeholders have expressed concern over Indiana’s lack of multimodal connections. One of the main Indiana logistics issues identified by the CILC was lack of efficient mode-to-mode connectivity.<sup>83</sup> One of the goals of INDOT’s *Indiana 2014 Multimodal Freight and Mobility Plan* was the improvement and establishment of multimodal and intermodal service. This plan is currently being updated, and is expected be published in late 2017. As indicated earlier, the CILC is a division of Conexus Indiana.

### 4.3.1 Intermodal

#### BENEFITS OF INTERMODAL SERVICE

Rail intermodal service provides benefits that include the following:

- **Transportation options** – Intermodal services are typically priced to be less than the cost of trucking, resulting in transportation savings and therefore lower costs of goods. The relative economics of intermodal service tend to improve for longer-distance hauls and for shippers that have shorter drayage (truck moves) to and from intermodal terminals.

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<sup>83</sup> Conexus Indiana, *Delivering Indiana’s Logistics Future*, May 2014.

- **Economic development** – Logistics and distribution establishments often locate near intermodal terminals. The availability of intermodal service makes areas more desirable for some businesses to locate.
- **Reduced highway costs and congestion** – Intermodal service has the potential to shift long-distance truck moves to rail.

### INTERMODAL FEASIBILITY

Given the benefits, Indiana communities have expressed interest in establishing intermodal terminals. It is useful to consider the elements that make intermodal service feasible and railroads willing to provide service to communities.

**Volume.** In general, railroad companies add new locations to their intermodal networks wherever they believe there will be sufficient customer traffic to support that terminal. However, below a threshold level of traffic, intermodal terminals are not economically justifiable to build, maintain or operate. The costs of operating and serving terminals per container decreases with volume. There is no set rule as to the minimum number of containers that a terminal must handle to be feasible. Western railroad companies have maintained that they will establish new terminals only if demand will generate daily trainloads of containers. But some recently established eastern intermodal terminals handle fewer than trainload volumes of containers. Railroad companies will likely add a terminal if the public sector funds the terminal and/or the terminal is tied to a major corridor investment program.

Because railroad intermodal service is most often used for hauling consumer products, railroad companies typically locate intermodal terminals near large metropolitan areas where many consumers are located. Usually, intermodal terminals located outside of major metropolitan areas cater to specific customers, specific industries, serve as gateways (e.g., ports), or have some other specific reason for their location other than general economic activity.

**Container Balance.** Establishing container pools is a key factor influencing the economics of intermodal service, whereby empty containers are made available for those that need them. But container pools require an appropriate balance of demand between inbound and outbound container loads. Repositioning empty containers undermines the cost-effectiveness of the service.

**Position within Network.** Indiana's proximity to Chicago has several implications. Chicago has served as a natural logistics hub, since it represents a gateway where eastern and western rail networks meet. Because intermodal terminal costs decline with volume, rail carriers usually prefer to limit the extent to which terminals on their systems compete with each other. Railroads may want to avoid establishing terminals near Chicago that will compete with their Chicago-area terminals. Also, for movements to/from eastern locations, a stop in Indiana can slow an intermodal train's progress to/from Chicago.

Intermodal rail is more efficient over long-distance moves, and since Indiana is close to eastern and western railroad interchanges, the short movement between Indiana and these gateways can be inefficient. One way to mitigate this issue is by run-through service, whereby eastern and western railroads operate almost as one. Trains (or at least blocks of cars) pass between carriers intact without containers being reclassified at interchange.



While Chicago has served as a natural logistics hub, congestion in Chicago has prompted some rail carriers to investigate alternative hubs. CSX has positioned its facility in North Baltimore, OH, as its primary alternative to Chicago for eastbound traffic, which could create additional challenges to establishing Indiana as an alternate intermodal hub to Chicago. On the other hand, railroads respond to market opportunities. As the Canadian National Railway/Indiana Rail Road service to/from Indianapolis has shown, under the right circumstances, new intermodal services in Indiana can grow.

**Shipper Decisions.** Most intermodal rail service is provided through intermediaries, whether they are intermodal marketing companies like Pacer, or shipping companies like American President Lines, trucking companies like J.B. Hunt, or parcel delivery companies like UPS and FedEx. The ultimate customer buys a door-to-door service from one of these companies, which in turn hires the railroad company to provide the rail portion of their service. Although the number of major steamship lines, intermodal marketing companies, trucking companies, and small package delivery companies is relatively small, they generate most intermodal traffic. These companies often prefer to consolidate their operations in major hubs like Chicago. In many cases, they own the containers in which products are shipped and can better manage their container fleets from fewer locations. Dray tractors and chassis are also better managed from a central location. The tendency of large intermediaries to consolidate operations at a few large hubs places smaller hubs such as those in Indiana at a disadvantage. These companies can be an important factor in determining where intermodal terminals and logistics hubs locate.

**Site Location.** The availability of a favorable site location is an extremely important consideration in establishing an intermodal terminal. NS previously provided the following criteria for intermodal site locations on its website, but these would be applicable to any railroad:

- Adjacent to the main rail line
- Large, relatively flat land with minimal streams and wetlands, minimizing impact to protected habitats and species
- Minimal interference with vehicular traffic at railroad crossings
- Convenient access to customers via interstate highways
- Locality with potential for additional economic development
- Community interest in jobs and environmentally sustainable freight transportation alternatives

### PROPOSED NEW INTERMODAL SERVICES

Some communities within Indiana have sought to establish new intermodal terminals or expand services at existing terminals, including Evansville, Elkhart, Terre Haute, Fort Wayne, Connersville, and Indianapolis. Several recent proposals are described below.

**Expansion of the Senate Avenue Intermodal Yard.** The Indiana Rail Road has plans to expand the Senate Avenue terminal at West Street and Wisconsin Street in Indianapolis to accommodate expected growth in rail traffic. This expansion involves providing additional areas for storing and handling containers as well as adding lights so that the facility can operate at night. Truck access to the facility will also be improved. Since opening in 2013, traffic at the terminal has increased dramatically.

The terminal facilitates rail service between Indiana and the West Coast ports of Prince Rupert and Vancouver (both in British Columbia), as well as to/from Montreal. One advantage of the Port of Prince Rupert is that it's closer to many Asian markets than other West Coast ports, allowing for faster vessel transit times to/from Asia. The terminal also bypasses Chicago. Shippers sometimes complain that the time required for containers to traverse short distances between terminals in Chicago can be comparable to the time required for trains to traverse the thousands of miles by rail between Chicago and West Coast ports. Due to the proximity of Prince Rupert to Asia and the service bypass of Chicago, total transit time from major Asian ports such as Shanghai and Quingdao, China, or Busan, South Korea, to Indianapolis averages less than 22 days via Prince Rupert and 25 days via Vancouver.<sup>84</sup>

Figure 4.2. CN/INRD Service from Prince Rupert to Indianapolis



The facility also provides an opportunity for central Indiana agricultural shippers to export by container for westbound movements to Asia. “Identity preserved” grain is best exported by container since it can be inspected, sealed in a container at origin, and transported without alteration to its destinations. Identity preservation is a major trend in the agricultural sector, and is impossible when grains from various sources are mixed together at elevators or on bulk ships. Distillers’ dried grains and solubles (DDGS), a byproduct of ethanol production, is difficult to export by bulk ship due to its handling properties. Containerized transport provides a reasonable alternative for exporting DDGS. In conjunction with the new Senate Avenue terminal, a container-stuffing facility has been established in Indianapolis (shown in Figure 4.3), along with on-site U.S. Department of Agriculture Federal Grain Inspection personnel.

<sup>84</sup> INRD website 2017.

Figure 4.3. Indianapolis Container-Stuffing Facility



Source: Midwest Commodities, LLC

One benefit of intermodal operations in Indianapolis is the balance of inbound and outbound containers. Indianapolis—unlike many other metropolitan areas—generates outbound container flows to roughly balance inbound flows of consumer products and other items.

**Relocating the CSX Intermodal Ramp at Evansville to a New Facility.** Economic development officials in southwest Indiana are studying the possibility of relocating the existing intermodal terminal in Evansville. The current intermodal ramp is landlocked and cannot be expanded. Serving the facility is awkward due to the yard's layout and local requirements. A new location could allow prospective customers to co-locate close to the terminal, as part of a larger logistics development. Figure 4.4 shows a rendering of a potential development.

One challenge to this initiative has been identifying a traffic base for a new facility, such as one or several anchor users that would drive demand for the facility. A new facility could induce more shippers to use intermodal transportation; however, a base of demand would be needed to justify the investment. Container volumes at the Evansville facility have trended downward since 2001 in part due to the closure of a Whirlpool plant in Evansville.

Figure 4.4. Southwest Indiana Logistics Center – Concept Drawing



Source: WIRED Intermodal Task Force

**Intermodal Service to/from the Gulf Coast.** Currently, there is no intermodal service between Indiana and the Gulf Coast. Adding service to the Gulf Coast through a CSX-served terminal in Southwest Indiana was one of the tactics suggested by the CILC to improve intermodal service in Indiana. Another option could be to establish a service at the Indiana Rail Road Senate Avenue Yard facility between Indianapolis and New Orleans, LA and Mobile, AL through a combined Canadian National/Indiana Rail Road service.

**West Coast International Service for Avon Yard.** Another tactic identified by the CILC to improve intermodal service in Indiana is to expand the Avon Yard to provide direct West Coast intermodal service to/from Los Angeles/Long Beach, CA via UP or BNSF interchange with CSX. The 2011 Indiana State Rail Plan discussed a UP/CSX service whereby containers were interchanged between the two carriers at St. Louis, MO for shipment to/from Indianapolis, thus bypassing Chicago. Currently, this is a “rubber tire” interchange, so that containers are moved by truck between the UP terminal in Dupon, IL and the CSX terminal in East St. Louis, MO. The service has insufficient demand to justify a “steel wheel” interchange between the two carriers by rail. Currently, UP and CSX provide service between Indianapolis and southern California through UMAX service, which uses 53-foot domestic containers, but CSX does not provide service between Indianapolis and the West Coast for international containers. One potential initiative could be to work with shipping companies, CSX, and UP or BNSF to determine if establishing direct international service to/from Indianapolis could be feasible.

## TRENDS THAT COULD POTENTIALLY IMPACT INTERMODAL RAIL IN INDIANA

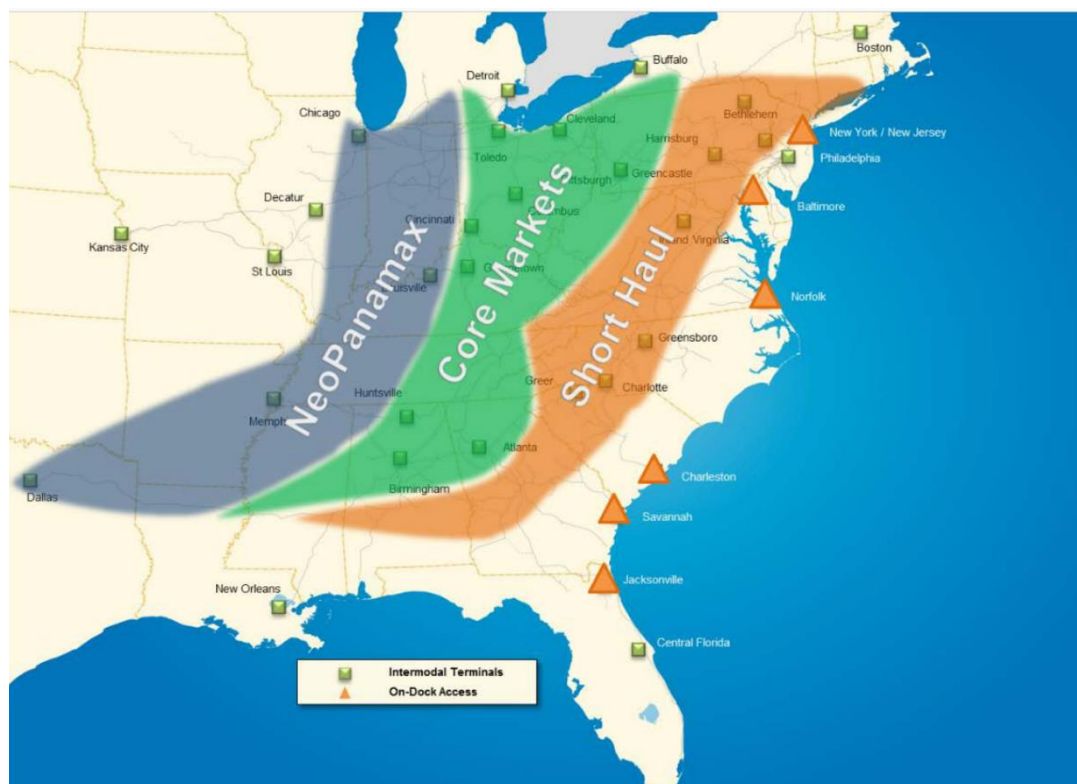
### PANAMA CANAL EXPANSION

An expanded Panama Canal began operation in June 2016. Larger “Neo Panamax” container ships carrying as many as 13,000 twenty-foot equivalent units (TEUs) are now able to transit the canal. This is 2.5 times more cargo than carried by previous “Panamax” vessels, which had a maximum capacity of about 5,000 TEUs. Increasing the size of ships that can fit through the canal changes the relative economics of transpacific trade. Larger ships provide economies of scale that result in lower operating costs per TEU. The relative cost of shipping products from Asia through the Panama Canal to East



Coast and Gulf Coast ports has declined compared to the relative cost of shipping products through southern California gateways with a rail connection to markets on the East Coast or Gulf Coast. A number of factors could limit the impact of the canal expansion. For example, transit times will still be much longer for all-water routes to eastern markets, so shippers that need fast transit times will continue to rely on West Coast gateways. It is still too early to determine whether the canal expansion has caused a shift away from West Coast ports; however, the canal expansion could create intermodal opportunities in Indiana. If more freight travels through Gulf Coast ports, trade between Indiana and the Gulf Coast could reach a threshold volume where establishing an intermodal service is feasible. Figure 4.5 is from a presentation by NS at the 2016 Indiana Logistics Summit.<sup>85</sup> This map suggests that traditionally, the NS markets to/from East Coast ports end roughly at the Indiana-Ohio border. West of that line, transpacific trade would more logically flow through West Coast ports. But with the Panama Canal expansion, the reach of NS East Coast service could extend into Indiana.

*Figure 4.5. Impact of Panama Canal on NS Intermodal Markets Served through East Coast Ports*



Source: Norfolk Southern

### **CSX HUB-AND-SPOKE NETWORK**

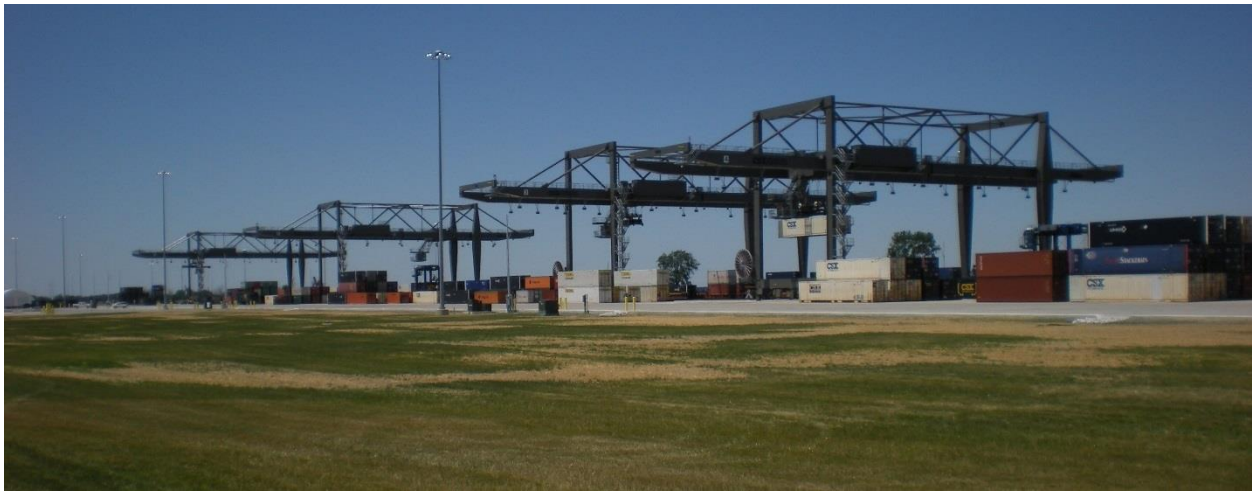
Another development that could affect intermodal transportation in Indiana is the new CSX hub-and-spoke intermodal system. Traditionally, railroads have preferred point-to-point intermodal service whereby trains carry full trainloads of containers from one origin to one destination. With point-to-point service, railroads are able to provide transit times for a service that is competitive to long-haul trucking.

<sup>85</sup> Rob Martinez, Vice President, Business Development and Real Estate, Norfolk Southern Corporation, at the 2016 Indiana Logistics Summit, Indianapolis.

Eastern intermodal service sometimes involves intermediate stops, but sorting of containers at intermediate stops is kept to a minimum.

CSX has been experimenting with a hub-and-spoke system whereby containers are shipped to a hub, resorted, and then shipped either to another hub or to their final destination. CSX has established a hub for this system in North Baltimore, OH (Figure 4.6) and plans to build a second hub in North Carolina. The hub-and-spoke concept is made possible by a new technology—wide-span gantry cranes—by which containers can be more efficiently stacked and sorted. Under the hub-and-spoke system, it is no longer necessary for a single origin/destination pair to generate enough traffic to justify intermodal service. The origins and destinations themselves need to generate enough freight to justify service to or from the hub, analogous to a small regional airport carrying passengers to or from an airline’s hub. Theoretically, the new CSX system could expand the number of markets that could be accessed from CSX terminals in Indiana.

*Figure 4.6. CSX North Baltimore Intermodal Facility*



#### **4.3.2 Transload**

As noted in Section 2.2.3, transload facilities are non-containerized truck/rail transfer locations. About \$90 million in proposed transload projects were suggested as part of surveys of rail needs performed by the Railroads of Indiana and Conexus Indiana for this State Rail Plan. Several of the discussions during stakeholder meetings for this State Rail Plan illustrated the benefits of and need for transload facilities. At one meeting, a railroad representative mentioned that the company was serving a number of small volume customers in an area. In this case, transload is a benefit since the amount shipped would never justify building track to each customer location. However, the transload enabled these customers to benefit from rail transportation without direct rail access.

One transload project of note is the Inland Logistics Port at Kingsbury in northwest Indiana. Originally, this area was envisioned as facilitating a service by which fruits and vegetables inside refrigerated train cars run non-stop from Florida to Kingsbury. Products would then be distributed throughout the Midwest from facilities in Kingsbury. The cold storage distribution concept could come to pass, but the 2,000-acre Kingsbury site could accommodate a broad range of distribution or other type businesses. A rail line was recently built into the site after it received CSX’s “Select Site” designation.

In another recently completed project, the Indiana Rail Road opened a new transload facility at Merom. The \$2.5 million investment for rail-to-truck transload is adjacent to Hoosier Energy's Merom Station. The facility offers service to agriculture and manufacturing industries in Indiana and Illinois in addition to the needs of the energy and mining industry that are the base business.

### 4.3.3 Automotive

The Indiana Rail Road and the Canadian National Railway are considering developing an automotive terminal on Indiana Rail Road's property in Indianapolis. It is estimated that over a million vehicles are delivered annually by truck into Indianapolis. The Canadian National Railway network has access to manufacturers in Mississippi and in Canada where many makes and models are produced.

### 4.3.4 Ports

Indiana lies at the crossroads of not only America's highway and rail network but also of America's inland waterways, with connections to the Great Lakes and the Ohio River, and near a link between the inland river system and the Great Lakes through the nearby Illinois Waterway (Figure 4.7). The following rail-related port needs have been identified, particularly as they relate to the Ports of Indiana, a quasi-governmental organization that operates three ports on the Ohio River and Lake Michigan:

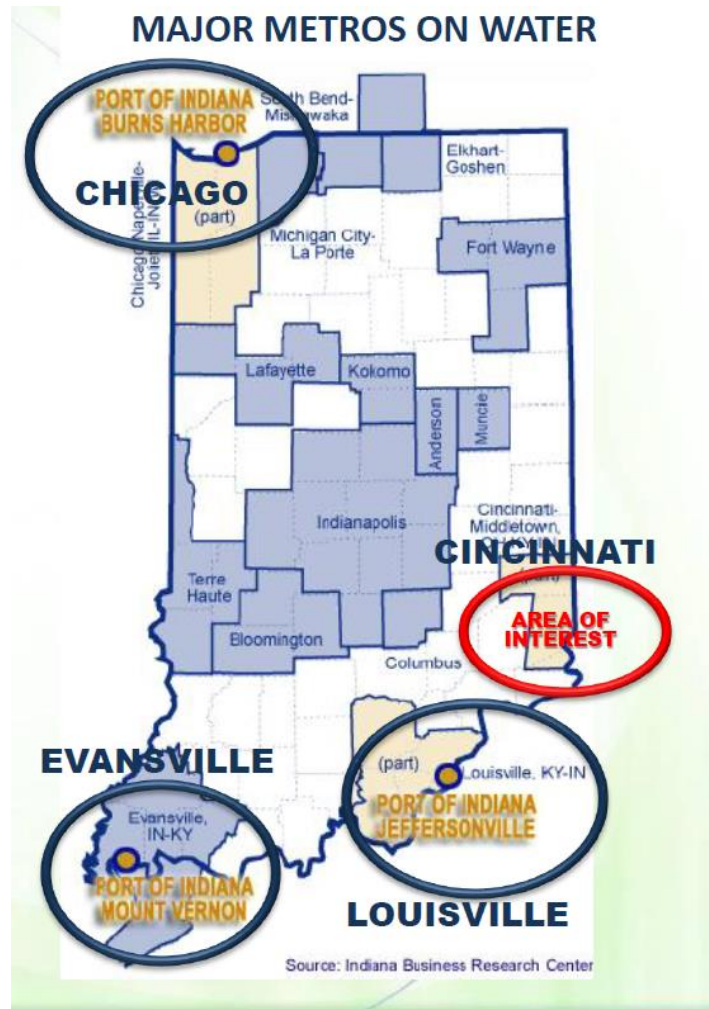
- **Connections to mainline rail network.** Ports such as the Port of Indiana-Burns Harbor connect to some of the busiest rail lines in the nation. However, accessing these lines has its challenges. In the case of Burns Harbor, Ports of Indiana seeks to improve its connection to the adjacent NS mainline to minimize congestion and just received a FASTLANE/INFRA small project grant. Conexus Indiana has proposed creating a spur off the South Shore Line for the Chicago South Shore & South Bend railroad line into the Port of Indiana-Burns Harbor.
- **Adjusting to changing freight and freight traffic patterns.** As patterns of rail service usage by ports change, it is necessary to adjust port infrastructure accordingly. Ports are more likely to handle unit train shipments than in the past. For example, the AAR reports that as of 1995, 40 percent of grain tonnage was carried in trainload quantities (50+ carloads), whereas in 2014, 68 percent of grain tonnage was shipped in trainload quantities. More so than in the past, ports must be prepared to handle trainload quantities of commodities. In 2015, the USDOT announced the award of \$10 million in TIGER Discretionary Grant money to the Ports of Indiana-Jeffersonville for multimodal infrastructure. The grant provides partial funding for \$17 million in infrastructure enhancements that includes the construction of a siding to accommodate unit train delivery to and from the port and reconfiguration of the waterfront railroad infrastructure, including two new rail loops that will dramatically increase operational efficiency.
- **Taking advantage of new opportunities.** As new port opportunities arise, rail infrastructure at Indiana's ports will need to adjust accordingly. Ports of Indiana has identified about \$252 million in projects that would provide additional capacity and support expansion plans. These projects include the following:
  - \$20 million rail and bulk transload project at Port of Indiana-Burns Harbor
  - \$50 million expansion of the Port of Indiana-Burns Harbor on a 57-acre site
  - \$100 million for development of a 500-acre mega site at the Port of Indiana-Mount Vernon



- \$32 million connection between Port of Indiana – Jeffersonville and the River Ridge Commerce Center industrial park, plus \$50 million for development of a new area within the port complex.

Ports of Indiana is also considering an entirely new port at the former Tanners Creek Generating Station in Lawrenceburg (area shown in Figure 4.37). Development of this port would likely require rail improvements to provide access to port tenants.

Figure 4.7. Potential Fourth Port – Ports of Indiana



Source: Ports of Indiana

## 4.4 RAIL AND ECONOMIC DEVELOPMENT

Taken from a survey of rail needs conducted for this State Rail Plan, a similar survey of needs conducted by Railroads of Indiana, and work by the Conexus Indiana Logistics Council, stakeholders have recommended \$66 million in industrial access improvements. These include projects that improve rail access to existing industrial sites or provide rail access to new industrial sites. Among these sites are “mega sites,” large areas that have been set aside for specific types of prospective users, such as automotive manufacturers.

During outreach sessions for this State Rail Plan, several stakeholders mentioned the need to consider rail when planning industrial parks. Several industrial parks were mentioned that were configured in such a way that providing rail access is now impossible. These were lost opportunities. One possibility for avoiding this situation in the future could be to require that rail be considered for certain state-sponsored economic development projects.

For rural shippers, maintaining access to the rail network can be an issue. It is important that railcars are made available and service into rural areas is maintained.

## 4.5 CONNECTIVITY

Between a survey of rail needs conducted for this State Rail Plan and a similar survey of needs conducted by Railroads of Indiana, stakeholders recommended \$6 million in projects that would improve or add physical connections between rail lines.

During outreach for this State Rail Plan, several stakeholders expressed concern over organizational barriers to connectivity, such as allowing one railroad to access another across a third railroad's line. While state and local officials can seek to provide incentives for one railroad to allow access to another, state and local governments do not have jurisdiction over rail access.

Another issue that relates to connectivity is PTC. PTC is a technology designed to automatically stop or slow a train before certain types of accidents occur, particularly train-to-train collisions, derailments caused by excessive speed, unauthorized incursions by trains into work zones where repairs are being made to track and structures, or the movement of a train through a switch that was left in the wrong position. The Rail Safety Improvement Act of 2008 mandated that Class I railroads install PTC on tracks that carry passengers or toxic-by-inhalation materials. Originally, the deadline for installing PTC was the end of 2015, although now the deadline has been extended to the end of 2018. As of mid-2017, Amtrak, NICTD, and Class I railroads such as NS and CSX have made progress toward PTC implementation but PTC has not been fully implemented.

Although the intent was to exempt short-line and regional railroads from PTC requirements, some small railroads in Indiana must access Class I tracks and therefore, are required to install PTC on their locomotives. These railroads are also required to have the information technology capability to communicate with PTC systems. This is a significant burden for small railroads.

## 5 Indiana's Rail Service and Investment Program

### 5.1 VISION

The vision, goals, and objectives for this State Rail Plan have been developed in close collaboration with stakeholders and reflect an extensive outreach effort to understand what Hoosiers hope for the future of the Indiana rail network. The vision, goals, and objectives also consider the overall INDOT mission and goals.

#### 5.1.1 Vision Statement

INDOT will promote improved safety, reliability and efficiency of the state's freight and passenger rail network with a goal of enhancing Indiana's economy.

To achieve this, INDOT will work with private railroads and public port authorities; promote both freight and passenger rail services; and work with partner agencies at all organizational levels to plan rail network improvements—including intermodal strategies—to enhance domestic and global connectivity for Indiana.

INDOT will explore avenues to provide financial resources supporting cost-effective investments to help achieve freight, intercity passenger and commuter rail network goals.

#### 5.1.2 Goals and Objectives

Based upon the vision described above, goals and objectives as set forth in this State Rail Plan are listed below. Goals break down the vision into manageable pieces. Objectives provide the types of actions and policies that will be employed to achieve the goals.

#### GOAL: SAFETY

Help improve and promote the safety of the rail system, as well as raise public's awareness of rail safety issues.

#### OBJECTIVES

- Reduce the number of rail-highway at-grade crossings
  - Work with railroads and local communities to close redundant crossings
  - Grade separate crossings where conditions warrant and funding is available
- Promote awareness of safety hazards related to rail-highway at-grade crossings and trespassing on rail rights-of-way through support of Operation Lifesaver
- Improve safety of rail-highway at-grade crossings
  - Promote repair of grade crossing surfaces in poor condition
  - Improve sight lines and passive warning devices at crossings

- Encourage communities and railroads to install other safety countermeasures where appropriate such as median barriers and channelization to actively and passively protected crossings.

### **GOAL: ECONOMIC DEVELOPMENT & CORRIDOR FINANCING**

Support economic competitiveness by supporting infrastructure improvements that reduce freight transportation costs and more effectively connect Indiana with regional, national, and international markets; Increase intermodal facilities where appropriate; Support infrastructure improvements that better connect people with economic opportunities; and support adequate and reliable funding for rail systems from all sources: federal, state, local governments and the private sector.

#### **OBJECTIVES:**

- Support efforts to better connect Indiana with regional, national and international markets through new or improved transportation service options:
  - Support practical efforts to better connect Indiana cities with global markets through improved intermodal rail container service
  - Support efforts to expand rail service through transload facilities
  - Support adequate rail connections to Indiana's ports and harbors
  - Support efforts to facilitate better connections between railroads
  - Promote the establishment or improvement of rail service at new or existing industrial sites
  - Support passenger rail connections between regional economic centers where prudent and cost effective to do so
  - Support the Chicago – Indianapolis – Cincinnati / Louisville passenger rail route
  - Support the Chicago – Fort Wayne – Columbus passenger rail route
  - Support the Chicago – Detroit passenger rail route
- Preserve and enhance existing rail corridors using existing state grant funds
- Identify additional federal and private funding sources for rail projects and programs
- Provide assistance to railroads, port authorities, and local governments to secure funding and financing for projects that benefit the public

### **GOAL: TRANSPORTATION EFFECTIVENESS**

Reduce bottlenecks and maintain rail system in a state of good repair to improve the reliability and efficiency of railroad transportation

#### **OBJECTIVES:**

- Use state and federal funds to support the maintenance of the rail network in a state of good repair, including not only railroad track improvements, but also relevant structures such as bridges

- Work with neighboring states to continue to investigate options to address regional bottlenecks in the existing rail network for both freight and passenger rail traffic, such as the Greater Chicago area
- Support opportunities to improve the speed and frequency of both freight and passenger rail service where financially and economically feasible to do so.
- Support improved connectivity within the State's rail infrastructure and with other modes of transportation
- Support the *Hoosier State* and improve upon the current services and schedule
- Support the double tracking of the Northern Indiana Commuter Transportation District (South Shore operated by NICTD)
- Offer support of the development of the Chicago – Fort Wayne – Columbus passenger rail route

## 5.2 PROGRAM COORDINATION

The long-term rail vision included within this State Rail Plan has been coordinated with other planning efforts. It considered the vision, goals, and objectives from INDOT's *2013-2035 Future Transportation Needs Report (Long Range Transportation Plan)*,<sup>86</sup> the *2014 Multimodal Freight and Mobility Plan* and strategies put forward by the Conexus Indiana Logistics Council. Sections 6.2 and 6.4 further describe this State Rail Plan's coordination with other planning efforts.

## 5.3 PASSENGER ELEMENT

### 5.3.1 *Hoosier State*

The Indiana General Assembly has approved \$3 million per year to cover ongoing operating costs of the *Hoosier State* service during the next biennial budget period, which covers July 1, 2017 through June 30, 2019. This is the first time *Hoosier State* funding has been added as a line item in the state's budget. Earlier, INDOT had been authorized to use funds from other programs to pay for the service such as the 2016 Tax Amnesty Program and the State Highway Fund. Because the *Hoosier State* is funded through the Indiana General Fund, it is not tied to any specific revenue source. Continued service beyond June 30, 2019, will rely on the Indiana General Assembly appropriating funds at that time.

Continuing to support the *Hoosier State* service generates impacts on the state. Because passengers would otherwise most likely have driven automobiles if they had not taken the train,<sup>87</sup> the *Hoosier State* service reduces vehicle miles travelled (VMT). This lowers vehicle operating costs and fuel consumption, reduces emissions, and decreases risks of highway crashes. The *Hoosier State* service also provides communities with an additional transportation option, and potentially a more enjoyable trip experience compared to driving or taking a bus. For some business travelers, passenger rail offers the opportunity for productive use of time in transit, in contrast to automobile travel, where driving precludes focusing on other matters. Crawfordsville, Lafayette, West Lafayette, Tippecanoe County,

<sup>86</sup> <http://www.in.gov/indot/2666.htm>

<sup>87</sup> A 2011 study by the Indiana University School of Public and Environmental Affairs notes that the automobile has an 88 percent mode share for intercity trips. Indiana University, *The Future of Intercity Passenger Transportation*, May 23, 2011, <http://www.indiana.edu/~cree/pdf/Future%20of%20Intercity%20Passenger%20Transport%20Report.pdf>.

and Rensselaer provide cash payments monthly, and Beech Grove provides an in-kind service worth \$18,000 per month.

INDOT has been gathering information to evaluate alternatives and opportunities to improve and enhance *Hoosier State* service. Specifically, INDOT is working with a consultant to:

- Provide engineering analysis of infrastructure improvements on host rail lines and propose a prioritized program of infrastructure enhancements that could improve and expand the *Hoosier State* service while at the same time enhancing or having a neutral impact on freight operations
- Update previously completed reports that assessed the capacity and operating statistics of rail lines used by *Hoosier State* service
- Analyze origin and destination data from Indianapolis to Chicago to evaluate traffic flows to verify need for additional capacity

The study will help INDOT to identify investment priorities for improving *Hoosier State* service. Those findings will be available in 2018.

### 5.3.2 Northern Indiana/Ohio Passenger Rail

INDOT supports the efforts of NIPRA and constituent local communities to bring passenger rail to the corridor between Chicago and Columbus, OH, with Indiana stations in Fort Wayne, Warsaw, Plymouth, Valparaiso, and Gary. A study commissioned by NIPRA developed projections of benefits and costs assuming a service with 12 daily trains in each direction with trains reaching maximum speeds of 130 miles per hour.<sup>88</sup> As described in more detail in Section 3.3, the study estimated that operating revenues of the service would exceed operating costs, the capital cost of establishing the service would be \$1.3 billion, and the impact of the project would be \$6 billion in user benefits over a 30-year life of the project. The extent to which the route performs as predicted will depend upon each of the study's forecasts, estimates, and assumptions coming to pass, including predicted ridership, revenue yields, financing, operating expenses, capital costs, operating plan, carrier cooperation, etc.

The earlier study was a feasibility study, aimed at testing a concept of the passenger rail route. In 2017, NIPRA initiated an Alternatives and Public Involvement Process as required by the National Environmental Policy Act under federal law, which will examine possible operating plans and preliminary costs of passenger rail on the corridor. This study is expected to be completed in the fourth quarter of 2017, which will position the project for potential federal funding for design and construction. Section 3.3 describes NIPRA's initiative in more detail.

### 5.3.3 Commuter Rail

As summarized in Table 5.1, NICTD identified \$1.6 billion in capital needs in its *20-Year Strategic Business Plan*, covering the time between 2014 and 2033.<sup>89</sup> Section 3.6 summarizes these needs.

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<sup>88</sup> Northern Indiana Passenger Rail Association, *Northern Indiana/Ohio Passenger Rail Corridor Feasibility Study and Business Plan*, January 2013.

<sup>89</sup> NICTD, Northwest Indiana Regional Development Authority, *20-Year Strategic Business Plan*, May 2014.



NICTD anticipated completing most of these projects by 2022; however, subsequent delays since the *20-Year Strategic Business Plan* was completed in 2014 could push back completion dates.

**Table 5.1. Northern Indiana Commuter Transportation District 20-Year Strategic Business Plan**

Project	Benefit	Investment (Millions)
Positive Train Control	Federally mandated safety infrastructure	\$43
New Car Orders	Replaces rolling stock that has reached the end of its useful life	\$250
Double Tracking	Expands capacity, provides greater reliability and scheduling flexibility	\$290
Metra Capacity Improvements	Expands capacity, provides greater reliability and scheduling flexibility	\$30
West Lake Extension	Expands service area	\$603
Portage/Ogden Dunes Hi-Level Platform	Reduces dwell times, improved travel time, ADA accessibility	\$7
Michigan City Realignment/Station	Improved safety, better station, reduced travel time, ADA accessibility, more parking	\$109
South Bend Realignment	Reduced travel time, better safety	\$15
Gary Station Improvements	Better travel time, reduced costs	\$38 (Alt 1)/\$52 (Alt 2)
Annual Capital Maintenance	Maintaining to a state of good repair	\$401

Source: Northern Indiana Commuter Transportation District 20-Year Strategic Business Plan

## 5.4 FREIGHT ELEMENT

### 5.4.1 Short-Range Investment Program

The short-range investment program represents those projects that are programmed to be completed within the next four years through 2021. For the purposes of this State Rail Plan, these generally consist of funded projects. The total cost of the short-range investment projects for which state and federal monies are being applied is approximately \$84 million. Appendix B lists the individual projects, which are summarized in Table 5.2. Additional projects from the long-range freight rail service and investment program will be added to the short-range rail service and investment program as funding is identified.

**Table 5.2. Summary of Short-Range Rail Service and Investment Program**

Funding Source	Number of Projects	Project Costs	Grant Awards
Industrial Rail Service Fund	8	\$5,067,862	\$2,172,011
Grade Crossing Fund	37	\$1,419,718	\$829,230
TIGER Discretionary Grant – Ports of Indiana – Jeffersonville	1	\$17,000,000	\$10,000,000
Section 130 Crossing Program	88	\$29,610,000	\$29,610,000
FRA Railroad Safety Infrastructure Improvement Program	4	\$1,280,000	\$640,000
Columbus L&I Grade Separation	1	\$30,000,000	\$28,500,000
<b>Total</b>	<b>138</b>	<b>\$84,377,580</b>	<b>\$71,751,241</b>

### 5.4.2 Long-Range Freight Rail Service and Investment Program

The Long-Range Investment Program represents the unfunded projects that have been identified in preparing this State Rail Plan and are projects to be completed over the next 20 years. A total of 148

projects with costs totaling \$900 million in freight rail infrastructure needs have been identified for the Long-Range Investment Program through four different sources:

- A questionnaire was distributed to all freight railroads operating in the state. Among the questions, railroads were asked to propose infrastructure projects that they believe are needed and would improve their systems.
- Railroads of Indiana, an association that represents short-line and regional railroads within the state, has also provided a project list gathered from its members.
- The Conexus Indiana Logistics Council prepared a series of regional strategic plans for improving overall freight movement within Indiana in 2015. A number of these projects directly relate to rail.
- Stakeholders such as St. Joseph County, MPOs and Ports of Indiana were consulted in preparing this State Rail Plan, and they have recommended several potential projects that were included in the Rail Plan.

Projects from each of these sources were combined into a single list. The list was then reviewed to eliminate potential duplication. Generally, projects put forward by rail carriers were assumed to represent reasonable needs, since railroads as operators are in the best position to understand their needs. CILC projects were included, since these projects were subjected to a vetting process in which CILC members voted for their inclusion in regional strategic plans. Projects presented by the CILC and by railroads complement each other, since CILC membership for the most part represents the perspective of shippers, economic development officials, and the broader business community, while railroads represent the rail carrier perspective.

Projects from other sources were included if they had progressed beyond conceptual stage and a need for the project has been established. Each of the projects presented has the potential for a public/private partnership.

The 148 proposed projects were grouped into types as shown in Appendix C. Project types are described in each of the sub-sections listed below.

#### **TRANSPORTATION EFFECTIVENESS: REHABILITATION PROJECTS**

A total of 64 rail-rehabilitation projects with a combined estimated cost of \$347.9 million have been identified. Most included projects are aimed at bringing low-density rail lines to a state of good repair or modernizing these rail lines. Most projects involve one or a combination of the following elements:

- Tie replacement
- Ballast and resurfacing
- Rail replacement
- Bridge repair, upgrade or replacement
- Culvert work and ditching

These projects reduce future operating and maintenance costs. They allow short-line and regional railroads to better serve their customers with more consistent and faster service. In some cases, the projects allow small railroads to handle industry-standard railcars of 286,000 pounds of gross weight.

The ability to handle heavier railcars reduces operating costs. In other cases, the projects will enable the rail lines to handle larger trains. For some railroads, even if the line can handle 286,000 pound railcars, an entire trainload of heavy railcars is more than the infrastructure can currently accommodate, and repeated usage by heavy trains can damage the line. Rehabilitation projects increase the usefulness of these rail lines and benefit rail corridor preservation. As future maintenance costs decrease and railroads are better able to serve their customers, rail lines become more viable and less likely to be abandoned. Some rehabilitation projects address problems that would otherwise effectively sever the rail line, such as bridges or rail segments that would otherwise be embargoed.

INDOT's primary source for funding rehabilitation projects on short-line railroads is the state's IRSF, which funded about \$2.7 million in projects per year between 2012 and 2016. At this level of funding, about \$53 million will be available during the 20-year financing period of this State Rail Plan. Rehabilitation projects have represented the primary usage of the IRSF, accounting for about 77 percent of project funding between 2012 and 2016.<sup>90</sup> If 77 percent of the IRSF continues to be used for rehabilitation projects, the total amount available for rehabilitation projects will be \$41 million. Railroads of Indiana has proposed doubling the IRSF, which if accomplished would increase available state funding to \$82 million for rehabilitation projects over the next 20 years. Over the past five years, \$9.8 million in federal funds have been applied to rail-rehabilitation projects, including an \$8.2 million TIGER grant for the reconstruction of the White River Bridge and a \$1.6 million EDA grant for improvements to the Indiana Southern Railroad. If Indiana received a comparable level of federal funding over the next 20 years, total federal funding available would be \$39.2 million.

Because federal multimodal discretionary grants are typically much larger than IRSF grants or loans, larger projects will tend to be more appropriate for funding through federal grant programs (projects significantly over \$1 million), while state monies will continue to fund smaller rehabilitation projects.

### **ECONOMIC DEVELOPMENT: MULTIMODAL PROJECTS**

Nineteen projects with multimodal aspects have been recommended. The cost of building rail access to the Ports of Indiana's potential facility near Lawrenceburg is unknown, but the estimated total cost of the remaining 18 projects is estimated at \$202 million. These projects facilitate the transfer of freight between truck and rail or rail and maritime modes. They include the following:

- Development or expansion of containerized intermodal terminals
- Development or expansion of transload facilities
- Development or expansion of rail port facilities

Ports of Indiana has the authority to initiate economic development projects, including multimodal facilities. The agency has bonding authority but bond repayment must be tied to the revenues of the facilities. Ports of Indiana has \$56 million in improvements in its 10-year capital plan, some of which will relate to rail. Local economic development agencies have also initiated multimodal projects within Indiana. Sometimes these are part of larger site developments such as industrial parks.

<sup>90</sup> Other projects included signal upgrade, new loop track, rail spurs or sidings.

Some argue that multimodal projects are best funded through private means. By this argument, if a market exists for a multimodal facility, the private sector typically does a good job of funding and addressing that market need. The INRD Senate Avenue intermodal terminal was primarily funded through private means, but also received \$600,000 from the IRSF. Multimodal facilities can generate public benefits that might not be accounted for in private-sector decision-making. Local shippers gain transportation options, freight is diverted from truck-to-rail and rail transportation generates fewer externalities. Transportation hubs provide potential economic development nuclei where companies locate to be near the hubs. No dedicated consistent funding source is available for multimodal projects in Indiana, but INDOT will continue to support feasible projects where a freight market for the facility has been shown to exist and relevant private-sector stakeholders such as railroads support the project.

### **SAFETY: CROSSING PROJECTS**

Twenty-four crossing projects worth \$171 million have been identified. Of these, nine are grade-separation projects worth \$156 million, \$9 million is for 11 crossing maintenance projects (resurfacing and maintenance of countermeasures), and \$6 million is for crossing upgrades. INDOT does not maintain a set budget for grade-separation projects but works with local communities to identify high-hazard crossings on high-volume, high-speed roadways, where a grade separation is potentially the best alternative.

Slightly under a quarter of the Railroad Grade Crossing Fund expenditures has been used for crossing surfacing projects. At current funding levels and assuming similar distribution of funds in the future, \$172,000 in state funds would be available for surfacing per year from the Railroad Grade Crossing Fund or \$3.4 million over the 20-year period of this State Rail Plan.

Crossing projects proposed in this State Rail Plan will improve safety, improve the mobility of roadway and rail traffic, and help bring crossings to a state of good repair.

### **ECONOMIC DEVELOPMENT: INDUSTRIAL ACCESS PROJECTS**

Twenty-six projects involving industrial access have been recommended. The cost of seven of these projects is unknown, but the cost of the other 19 is about \$67 million. Of these, \$40 million would be used to build rail access from Port of Indiana – Jeffersonville to the River Ridge Commerce Center. The remainder of the proposed projects are smaller rail spurs or sidings that provide access to industrial locations.

Between 2012 and 2016, 18 percent of the IRSF was used for industrial access projects, including a new loop track for one railroad and industrial rail spurs/sidings for others, equaling an average of around \$500,000 per year. Over the 20-year period of this State Rail Plan, this would translate to about \$10 million in available funding. The IEDC invested about \$4.3 million in industrial access projects between 2012 and 2016, corresponding to roughly \$900,000 per year. If funding levels were to remain constant, over the 20 years of this State Rail Plan, \$17 million in IEDC funding would be available for industrial access projects.

Industrial access projects included in this State Rail Plan will help attract and retain companies in Indiana and will provide shippers with transportation options.

### TRANSPORTATION EFFECTIVENESS: OPERATIONAL IMPROVEMENTS

Twelve projects to improve rail operations were identified with a cost of \$39 million. These projects, generally located on short-line and regional railroads, include the following:

- Expanding sidings and support yards to expand capacity
- Constructing new repair and storage facilities
- Upgrading signals

The Plainville Siding Project was funded by the FRA for \$1.6 million, which increased the capacity of an Indiana Southern rail line. If a similarly sized grant is available every five years over the next 20 years, the available funding would be around \$6.2 million. Operational improvement projects lower the costs and increase the capacity of rail networks. Between 2012 and 2016, INDOT awarded one IRSF grant for a CTC upgrade and one IRSF grant to add control to a switch so that it could be controlled by CTC. These accounted for \$120,000 per year or five percent of the IRSF program. Assuming a similar distribution of funds into the future, this would translate to \$2.4 million in available funds over the 20 years covered by this State Rail Plan.

### TRANSPORTATION EFFECTIVENESS: CONNECTIONS

Three projects involving new connections between railroads were proposed with a total cost of \$6 million. Included is a project to install PTC onto a short-line railroad's locomotives and implement necessary information technology. This is considered a "connection" project, since it allows the short-line to access a Class I railroad line. Connection projects provide shippers with additional rail options, and potentially improve rail efficiency.

### RAIL RELOCATION/QUALITY OF LIFE

Three rail relocation/quality of life projects were recommended. One includes moving the CSX switch yard from Terre Haute to south of the city. Another project would build a CSX bypass around Evansville. The third would bypass the Evansville Western Railway around Mount Vernon. No estimated cost for the Mount Vernon project is available, but the other two projects are estimated to collectively cost \$53 million.

The intent of these projects is to move rail lines out of densely populated areas, which would reduce the number of rail-highway at-grade crossings, reduce the frequency with which trains block crossings, reduce impacts of train noise, and potentially free up real estate in high-density areas to be used for other purposes.

These types of rail relocation projects require cooperation from rail carriers and can encounter resistance from landowners in areas where rail lines and yards are being relocated. No funding source is currently available for this type of project in Indiana.

### PHASING

The IRSF and RRGCF are annual programs, and in some cases, it is possible to program eligible projects more than one year into the future.<sup>91</sup> INDOT's sponsorship of projects for federal funding is

<sup>91</sup> In a few cases, railroads have applied multiple years for multiple rounds of funding for the same project.

currently reactive and stakeholder led. For example, railroads in Indiana have become aware of funding or financing opportunities, and have requested sponsorship by INDOT to pursue these funding opportunities. To some extent, this stakeholder-lead approach to rail project selection generally reflects a lack of consistent, dedicated federal funding. When funding availability is unknown from year to year and completing a project is dependent upon successfully winning a competitive grant, it is difficult to develop a long-term program. Opportunities are seized as they arise. Each funding opportunity may be better suited to certain types of projects and not others. Despite these uncertainties, INDOT rail planning practices could change in the future to a more programmed approach.

If INDOT were to find itself prioritizing multiple projects, they could be evaluated against goals and objectives included within this State Rail Plan. The evaluation would be consistent with other INDOT plans such as the long-range transportation plan or the traffic safety plan for goals to improve crossings.

### SUMMARY OF LONG-RANGE RAIL SERVICE AND INVESTMENT PROGRAM

Table 5.3 summarizes the Long-Range Rail Service and Investment Program. The total cost of the projects identified is \$883 million.<sup>92</sup> Against these needs are \$158 million in available public sector funding. The available funding assumes that future funding levels will be similar to that of the past five years. However, because no consistent dedicated federal funding source exists for freight rail projects, it is far from certain what the available funding will be. Funding shown in Table 5.3 does not include private sources.

*Table 5.3. Summary of the (Unfunded) Long-Range Freight Rail Service and Investment Program*

Type of Projects	Number of Projects	Benefits	Value of Projects with Cost Estimates Provided (Millions)	Available Funding based on Past Funding Levels (Millions)
Rail Line Rehabilitation	64	State of good repair, mobility, corridor preservation	\$241	\$80 (\$41 IRSF, \$39 federal)
Multimodal	19	Economic development, access	\$202	\$40 federal
Crossings	24	Safety, mobility, state of good repair	\$171	\$3 for resurfacing from Railroad Grade Crossing Fund, uncertain for grade separation
Industrial Access	26	Economic development, mobility	\$68	\$27 (\$10 IRSF, \$17 IEDC)
Operational Improvements/Connections	15	Mobility, capacity	\$39	\$8 (\$2 IRSF, \$6 federal)
Quality of Life/Rail Line Relocation	3	Quality of life, real estate	\$53	\$0 (none currently identified)
Total (Excl. duplicates of projects in multiple categories)	148		\$883	\$158

<sup>92</sup> The \$883 million figure does not include several projects for which cost information is not available.



## 5.5 RAIL STUDIES AND REPORTS

A number of rail-related studies and reports are currently being conducted in Indiana:

- INDOT is conducting a study to investigate potential improvements to host-railroad lines on the *Hoosier State* route which is scheduled for completion in 2018.
- The Purdue University Joint Transportation Research Program is analyzing ridership of the *Hoosier State* route which is scheduled for completion in December, 2017.
- The NIPRA and supporting jurisdictions have initiated an alternatives analysis and public input process as required by the National Environmental Policy Act to be eligible for federal funding.

## 6 Coordination and Review

Numerous stakeholders and members of the general public were consulted during the preparation of this State Rail Plan.

### 6.1 APPROACH TO PUBLIC AND STAKEHOLDER OUTREACH

INDOT is committed to engaging rail stakeholders and the general public in state rail planning activities. Stakeholder and public input for the Indiana State Rail Plan fostered a dialogue between INDOT, the public, and key stakeholders. This dialogue complemented research activities, helping to fill information gaps. Input for this State Rail Plan was gathered in a number of ways. Table 6.1 presents the methods used and the purpose for each.

*Table 6.1. Outreach Approaches in the Indiana State Rail Plan*

Outreach Methods	Purpose
Railroad/other data collection and interviews	Conducted interviews and submitted information requests to gain information from railroads on current conditions and specific needs, as well as general feedback regarding rail issues in Indiana.
Online survey	Enabled the general public to comment on the Indiana State Rail Plan using a standard set of questions.
Open houses	Met with and informed the general public of the purpose of the State Rail Plan. Solicited input on rail issues and opportunities.
Regional stakeholder workshops	Met with and obtained input from representatives of railroads and other organizations that have an interest in rail and are impacted by rail issues.
Meetings with stakeholder groups, interviews	Gained input from specific interest groups, interviewed individuals.

#### 6.1.1 Identification of Stakeholders

WSP | Parsons Brinckerhoff and INDOT identified the following stakeholders with an interest or insights that are relevant to railroad transportation in Indiana:

- MPOs
- Railroads
- Passenger rail entities
- Railroad shippers
- Trade associations of railroads, shippers, or other entities with an interest in rail transportation
- Academics with a railroad focus
- Port authorities that interact with railroads
- Government officials with an interest in railroads

Identified stakeholders were directly contacted based on their involvement in rail transportation to either complete an information request or to participate in one of three regional stakeholder workshops. A total of 137 stakeholders were identified and contacted. Table 6.2 displays the breakdown of stakeholders by type of organization.

Table 6.2. Identified Stakeholders by Type of Organization

Type of Organization	Number of Stakeholders
Academic	2
Association	31
Government	26
Railroad (including Amtrak and NICTD)	44
Shipper	33
<b>Total</b>	<b>137</b>

### 6.1.2 Stakeholder Regional Workshops and Open Houses

Regional stakeholder workshops and public open houses were held at the following locations and dates:

- Vincennes, November 10, 2016
- La Porte, November 15, 2016
- Indianapolis, November 17, 2016

During each day at each location, a stakeholder workshop was held between 2:00 PM and 3:30 PM and a public open house was held between 5:30 PM and 7:00 PM. Due to the large number of stakeholders replying to the workshop invitation in Indianapolis, an additional stakeholder workshop was held on November 17 between 10:30 AM and 12:00 PM.

The stakeholder workshops began with a brief presentation to explain the purpose of the meeting and the purpose of this State Rail Plan. This was followed by a general set of questions intended to solicit discussion. Questions were as follows:

- What are the strengths of the Indiana freight and passenger rail system?
- What are the deficiencies of the Indiana freight and passenger rail system?
- What improvements are needed?
- What should be Indiana's rail priorities?

The three open houses provided the general public an opportunity to learn about this State Rail Plan and to provide input. Open houses were advertised by press release and consisted of an open format where participants could view a series of display boards about this State Rail Plan. Table 6.3 displays the number of people attending each stakeholder workshop and open house (excluding INDOT and project consultant staff).

INDOT staff provided brief presentations. Following the presentations, the PowerPoint displays used in the presentations played on continuous loop. Participants could discuss rail issues and opportunities with INDOT and project consultant staff. Survey forms were provided to complete at the site, or mail back to INDOT.

Table 6.3. Attendance at Stakeholder Workshops and Open Houses

Location/Date	Stakeholder Workshop	Open House
Vincennes, November 10	9	3
La Porte, November 15	12	12
Indianapolis, November 17 (Morning Stakeholder Meeting)	14	18
Indianapolis November 17 (Afternoon Stakeholder Meeting)	11	N/A

### 6.1.3 Interviews and Stakeholder Meetings

In addition to the stakeholder workshops, INDOT and consultant staff attended meetings or conference calls with Ports of Indiana, St. Joseph County, and Conexus Indiana. Consultant staff conducted interviews with individual railroads, several economic development agencies, and several non-railroad transportation providers.

### 6.1.4 Railroad Information Requests

Class I, II, and III railroads in Indiana were sent information requests. The purpose of the information requests was to 1) collect information on the condition, usage and extent of each railroad's infrastructure; 2) to identify needs for the Rail Service and Investment Program included in this State Rail Plan; and 3) to understand railroads' general views of rail issues in Indiana. Twenty-two short-line and regional railroads in Indiana responded to the information request. NS and CSX also provided input.

### 6.1.5 Online Survey

INDOT posted an online survey on its website. A total of 523 responses were received. Survey questions were tailored to the specific interests of respondents, depending upon whether they indicated that their interests related to freight rail, passenger rail, or concerns over rail-related community impacts (crossings, safety, noise, etc.). Some questions asked survey participants to select responses from a set of predetermined options, while other questions were open-ended. (Appendix D provides a summary of survey responses.)

## 6.2 COORDINATION WITH NEIGHBORING STATES

INDOT coordinates with other states in the region through a series of regional commissions and initiatives. INDOT is a participant in the FRA's Midwest Regional Rail Plan as well as the Midwest Intercity Passenger Rail Commission. In addition, INDOT is active with national organizations that facilitate discussions on a regional and national level, including the States for Passenger Rail Coalition, the State Amtrak Intercity Passenger Rail Committee, and the Standing Committee on Railroad Transportation. INDOT's work in these national and regional initiatives and committees is reflected in this State Rail Plan.

## 6.3 ISSUES AND RECOMMENDATIONS

Stakeholders and members of the general public raised issues and made recommendations during the preparation of this State Rail Plan. These are summarized below, organized by subject area. Chapters 3, 4, and 5 address issues and opportunities raised by stakeholders and the general public.

### 6.3.1 Economic Development

#### CONNECTIONS TO MARKETS

- Rail-served land available for development is limited. Communities need to plan wisely to try to keep land available for rail-related development.
- Rail needs to be considered when planning industrial parks. MPOs should consider including rail service to new industrial developments in their plans. Opportunities are being lost. Considering rail could be made a requirement for receiving certain types of state economic development funds.
- More money is needed for economic development projects that can be applied to rail-served public/private initiatives.
- Agricultural yields are growing in Indiana, and the state has a strategic advantage in agriculture, since it is unique in combining big Midwestern agricultural production with close proximity to eastern food and feed markets and Atlantic ports. Rail needs to support this advantage.
- Connectivity between short-line railroads and Class I railroads is important for rural communities. There is an issue of railroads not providing service or not making equipment available to shippers in rural markets.
- Some short-line transload facilities could use better access to highways, bypassing city streets.
- Several short-lines would like access to port facilities, although they are not located near the water. Presumably, access would be accomplished through an agreement with other carriers.
- Opportunities exist for intermodal service on short-lines. To be practical, such a service would require not only cooperation from the Class I railroads, but also the correct market conditions, including sufficient volumes to make the service practicable and appropriate container balance/availability.
- Within Indiana are examples of “paper barriers,” where a short-line railroad is cut off from a nearby market. To access the market would require crossing or moving a short distance on a Class I railroad’s line, which has been disallowed. INDOT should investigate whether it could compel or convince Class I railroads to provide access.
- South Bend is interested in using passenger rail to promote economic development by moving station(s) to downtown from the outskirts of town.
- HHPA (Hoosier Heritage Port Authority) is cut off from the general rail system and would like a diamond in Tipton.
- Several opportunities were identified for rail infrastructure that could be used to bypass Chicago. One is the Great Lakes Basin Transportation’s proposed rail line. Also, the Toledo Peoria & Western (TPW) was identified as a rail carrier providing a potential bypass to Chicago. TPW could serve as a bridge carrier for eastern and western railroads.
- A stakeholder recommended an intermodal terminal at Gary Buffington Drive. To access the intermodal terminal, as well as to better access Arcelor Mittal, Lake Yard, and other properties along the lake, a tunnel under NS main line and CN Lake Subdivision should improve access. The

tunnel would be located at the “502”, otherwise known as Pine Junction and would be used by the Indiana Harbor Belt railroad.

### OVERALL COMPETITIVENESS

- A general economic development view in northwest Indiana is that the region could become an alternative to Chicago. People could take part in the economy of the Chicago Metropolitan Area without the high costs of living or locating a business in Chicago. Good transportation connections are vital for this strategy to succeed, both for freight and passengers.
- Chicago will not be able to accommodate future demand for east-west freight flows. Freight flows, including both rail and truck, between Kansas City and the East Coast will need to pass over the I-70 corridor. This is an opportunity for Indiana.

### 6.3.2 Effectiveness

#### BOTTLENECKS/CAPACITY

- Indiana needs to look over state lines and coordinate regarding Chicago. Chicago has major impacts on rail operations in Indiana.
- CREATE project has been great, but bottlenecks are located in the Indiana approaches to Chicago. The Indiana Gateway Project was a good start, but there needs to be additional work on rail congestion in northwest Indiana.
- Better classification options are needed. Shippers have long transit times where trains cross the state border multiple times because cars are being classified by very indirect routes.
- Given the highway congestion in northwest Indiana, rail has an opportunity to provide an alternate transportation solution, as well as mitigate the congestion.
- I-69 in Indianapolis is congested. Commuter rail could help relieve congestion from the northern counties surrounding Indianapolis.

#### STATE OF GOOD REPAIR

- Rail corridor preservation is a significant issue, particularly for rural areas.
- Railroad bridges need to be front and center. Per FRA requirements, many short-line railroads have had bridges inspected recently. These have uncovered problems previously unknown, and some short-lines face difficult decisions now as to how to react.
- Indianapolis Union Station needs improvement, including the addition of parking.
- Concern was expressed over the canceling of the State Fair Train due to track condition.

#### SPEED AND FREQUENCY/AVAILABILITY OF PASSENGER RAIL

- A need exists to improve transit times and increase frequency of the *Hoosier State*.
- The *Hoosier State* needs more convenient times.
- The *Hoosier State* needs to be more reliable.
- INDOT should stress the positive economic development impacts of the *Hoosier State*. Passenger rail can also be an important transportation option for those who cannot drive.
- The *Cardinal* should be a daily train.



- Advocates for Chicago-Columbus corridor through Fort Wayne are pushing for passenger rail service.
- Railways along the I-65 corridor could provide a key Midwest intercity passenger rail corridor. Given the distances between markets and the size of markets served, this could be an opportunity.
- This State Rail Plan should mention the possibility of commuter rail between Indianapolis, Muncie, and Anderson.
- Bus service between intercity passenger rail stations and Indiana's universities should be established. Passenger rail in general could help in retaining college grads.
- This State Rail Plan should consider revival of the Big 4 route as a passenger rail route per the Midwest Regional Rail Initiative plan.

### 6.3.3 Safety

#### CROSSINGS

- Railroads do not believe that all roadway crossings on their lines are necessary. Some crossings are lightly used, and alternate crossings are nearby. Suggest increasing the amount that states provide as an incentive to close crossings, and develop a "best practices" list of how best to help communities close crossings and improve safety on corridors. Not all communities seem to be aware of state funds available to close crossings. Also, maybe the state should come in more forcibly to help get crossings closed. In general, railroads would like to work with INDOT on crossing closures.
- Local emergency responders should be better trained on how to respond to vehicle-rail crashes. Police need to follow through with citations for violations at crossings in order to change behavior.
- INDOT should do more corridor studies to look at groups of crossings in a community to determine an overall approach to communities with multiple crossings.
- Motorists often drive around gates. Improvements such as four quad gates need to be implemented.
- INDOT should look for ways to help and promote Operation Lifesaver.
- Resurfacing crossings can cost a lot of money and can kill a small railroad's capital budget for a year. Currently, if INDOT is doing a big road expansion project, railroad crossings will be in the budget. But for road resurfacing, the crossing resurfacing is left to a railroad. (INDOT) may want to include crossings in resurfacing projects. Railroads could use help maintaining crossings on state roads. A number of public comments complained of the condition of crossing surfaces.
- Crossing issues are significant for rural areas within the state.
- Growing areas should be a priority for crossing projects.
- Some crossings have extended wait times, such as the CSX crossing at MLK Boulevard in Anderson.
- Stakeholders expressed concern over blocked crossings for rail lines with growing traffic, such as the L&I and EVW.

- Local communities could assist the state in planning crossing improvements by analyzing crashes and crossing conditions, and searching for funding. For example Fort Wayne's MPO has been gathering data to identify priority crossings for improvement or grade separation.

#### HAZARDOUS MATERIALS

- The Department of Homeland Security has funds available to Local Emergency Planning Committees to conduct hazardous commodity flow studies to show communities what commodities are being shipped through downtowns.

#### 6.3.4 Quality of Life

- ADA compliance at rail stations should be considered in this State Rail Plan.
- Land owners and other people in affected communities expressed concern about Great Lakes Basin Transportation (GLBT) line passing over farm land, displacing land owners. GLBT management suggest that this State Rail Plan should consider/assess the need for the GLBT line as a reliever to Chicago congestion.

#### 6.3.5 Transportation Finance

- Because they are competing for the same funds, maybe railroads and communities within a given region should pool their applications when applying for federal discretionary grants. Applications should be regional.
- The IRSF is too competitive. A lot of good projects are not funded due to limited availability of funds. The fund should be increased.
- The IRSF should be quarterly. Annual awards do not necessarily correspond to business cycles.
- Balanced transportation policy, where rail is funded on an even basis with other modes.
- Railroads of Indiana is working to double the funding for the IRSF. As the sales tax has increased over the years, the IRSF has remained constant, so inflation has reduced purchasing power. These investments will help Indiana businesses. Timely maintenance provides a lower cost in the long run.
- The Indiana logistics tax credit as currently configured would only benefit a railroad if it were to invest in a very major capital project. The tax credit would be more useful if it were applicable to smaller projects.
- Maybe IRSF should be opened to Class I projects. Kentucky's program was reworked so that it could be used for Class I investments.

### 6.4 COORDINATION OF RAIL PLANNING WITH OTHER PLANNING ACTIVITIES

Updates to the Indiana Multimodal Freight and Mobility Plan and State Rail Plan are occurring concurrently in 2017, Findings from the modal plans will provide inputs to the Indiana multimodal Long Range Transportation Plan. This State Rail Plan has also considered and incorporated needs and strategies identified by the Conexus Indiana Logistics Council.

This State Rail Plan has been coordinated with local and regional planning efforts. Each of Indiana's 14 MPOs were invited to attend stakeholder sessions for this State Rail Plan. Representatives of nine MPOs attended these meetings. This State Rail Plan has incorporated the findings of local planning studies, including those by St. Joseph County, and the Northwest Indiana Regional Planning Commission.